#### ENDURING RESOURCES, LLC

425 Seventeenth Street, Suite 1500 Denver, Colorado 80202

Telephone:

303-573-1222

Facsimile:

303-573-0461

August 15, 2006

State of Utah Division of Oil, Gas and Mining P.O. Box 145801 Salt Lake City, Utah 84114-5801 Ms. Diana Whitney Attention:

Request to Directionally Drill and for Exception Well Location RE:

Southam Canyon 10-25-44-32 State Lease: ML-47065

SE-SE 32-10S-25E (Bottom Hole Location) NE-SE 32-10S-25E (Surface Location)

Uintah County, Utah

Dear Ms. Whitney:

In order to avoid steep slopes and limit surface impact, Enduring Resources, LLC ("ERLLC") has staked the surface location of the above-referenced well outside of the 400' drilling window on the Well pad of the Southam Canyon 10-25-43-32. The BHL and produced zones will be within the 400' window of the SESE.

This well will be drilled directionally and it's surface location is only 20' from the Southam Canyon 10-25-43-32 Well.

- ERLLC is the only leasehold interest owner within 460 feet of any part 1. of the well's proposed well bore and surface location.
- ERLLC grants itself permission for the well's exception surface and BHL A. locations, and
- ERLLC grants itself permission to directional drill said well. B.

In the event there are any other outstanding matters preventing this APD from being approved, please let me know at your earliest convenience, 303-350-5114 (aarlian@enduringresources.com).

Very truly yours

**ENDURING RESOURCES, LLC** 

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Alvin R. (Al) Arlian

Landman - Regulatory Specialist

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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AMENDED REPORT □

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SIGNATURE ASSIGNED: L3-047-38481  APPROVAL:  DATE 7/19/2006  Approved by the Utah Division of Oil, Gas and Mining RECEIVED  APPROVAL:  Date: 17-18-06117 2006	<b>✓</b> EVIDEN	CE OF DIVISION C	F WATER RIGHTS A	APPROVAL FOR US	E OF WATER	FORM 5, IF OPERATOR IS PI	ERSON OR COMPANY OTHER THA	N THE LEASE OWNER
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#### T10S, R25E, S.L.B.&M. ENDURING RESOURCES N89'57'W - 39.92 (G.L.O.) 2635.71' (Measured) N89'58'W - 39.96 (G.L.O.) WELL LOCATION. TOP OF HOLE FOR THE N89°57'W G.L.O. (Basis of Bearings) S89°59'58"W - 2635.85' (Meas.) SOUTHAM CANYON 10-25-44-32, THE TOP OF HOLE LOCATED AS SHOWN IN Brass Cap Brass Cap Brass Can THE NE 1/4 SE 1/4, THE BOTTOM HOLE (Meas. LOCATED AS SHOWN IN THE SE 1/4 SE (G.L.O.) 1/4 OF SECTION 32, T10S, R25E, S.L.B.&M. UINTAH COUNTY, UTAH. 2667.05 N00°04'E WELL LOCATION: SOUTHAM CANYON 10-25-44-32 ELEV. UNGRADED GROUND = 5804.8' 1975 Brass Cap Brass Cap 32 Top of NOTES: Hole 555 1. The Bottom of hole bears SO4°08'22"W 1468.37' from the Top of Hole. THIS IS TO CERTIFY THE PREPARED FROM FIELD MADE BY ME OR UND THE SAME ARE TRUE AND GORRECT TO MY KNOWLEDGE AND GORRECT TO Drilling Window N00°16'E 20°15'28"E 662' **Bottom** of Hole 1975 1975 1975 Brass Cap Brass Cap Brass Cap S89°59'18"E - 2649.30' (Meas.) N89°55'53"E – 2636.63' (Meas.) TRI STATE LAND SURVEYING & CONSULTING S89°57'E - 40.13 (G.L.O.) $N89^{\circ}59^{\circ}E - 39.97$ (G.L.O.) 180 NORTH VERNAL AVE. - VERNAL, UTAH 84078 (435) 781-2501SOUTHAM CANYON 10-25-44-32 DATE DRAWN: SHEET SURVEYED BY: J.H. = SECTION CORNERS LOCATED (Surface Location) NAD 83 10-27-05 LATITUDF = 39°54'14.47"**REVISED:** 2b DRAWN BY: F.T.M. BASIS OF ELEV; U.S.G.S. 7-1/2 min LONGITUDE = 109° 07' 03.11' NOTES: QUAD (WEAVER RIDGE) **OF 10** SCALE: 1" = 1000'

## Enduring Resources, LLC Southam Canyon 10-25-44-32 SE-SE 32-10S-25E (Bottom Hole Location) NE-SE 32-10S-25E (Surface Location) Uintah County, Utah State Lease: ML-47065

## **ONSHORE ORDER 1 - DRILLING PLAN**

## 1. <u>Estimated Tops of Geological Markers:</u>

Formation	Depth (K.B.)				
Uinta	Surface				
Green River	Surface				
Wasatch	2030				
Mesaverde	2890				

## 2. Estimated Depths of Anticipated Water, Oil, Gas or Other Minerals:

Substance	Formation	Depth (K.B.)
	KB-Uinta Elevation: 5820'	
Oil / Gas	Green River	Surface
Oil /Gas	Wasatch	2030
Oil /Gas	Mesaverde	2890
	Estimated TD	4815

An 11" hole will be drilled to only approximately 1,716 feet because it is a directional well. The depth will be determined by the depth that the Birds Nest zone is encountered. The hole will be drilled 400 feet beyond the top of the Birds Nest zone and surface casing will be set.

## 3. Pressure Control Equipment: (3000 psi schematic attached)

- A. Type: Eleven (11) inch double gate hydraulic BOP with eleven (11) inch annular preventer on 3,000 psi casinghead, with 3,000 psi choke manifold equipped per the attached diagram. BOPE as specified in *Onshore Oil & Gas Order Number 2*. A PVT, stroke counter and flow sensor will be installed to check for flow and monitor pit volume.
- B. Pressure Rating: 3,000 psi BOPE
- C. Kelly will be equipped with upper and lower Kelly valves.
- D. Testing Procedure: Annular Preventer

At a minimum, the annular preventer will be pressure tested to 50% of the stack rated working pressure for a period of ten (10) minutes or until provisions of the test are met, whichever is longer.

At a minimum, the above pressure test will be performed:

- 1. When the annular preventer is initially installed;
- Whenever any seal subject to test pressure is broken; 2.
- Following related repairs; and 3.
- At thirty (30) day intervals. 4.

In addition to the above, the annular preventer will be functionally operated at least weekly.

## Blow-Out Preventer

At a minimum, the BOP, choke manifold, and related equipment will be pressure tested to the approved working pressure of the BOP stack (if isolated from the surface casing by a test plug) or to 70% of the internal yield strength of the surface casing (if the BOP is not isolated from the casing by a test plug). Pressure will be maintained for a period of at least ten (10) minutes or until the requirements of the test are met, whichever is longer.

At a minimum, the above pressure test will be performed:

- When the BOP is initially installed; 1.
- Whenever any seal subject to test pressure is broken: 2.
- Following related repairs; and
- At thirty (30) day intervals. 4.

In addition to the above, the pipe and blind rams will be activated each trip, but not more than once each day. All BOP drills and tests will be recorded in the IADC driller's log.

#### E. Miscellaneous Information:

The blowout preventer and related pressure control equipment will be installed, tested and maintained in compliance with the specifications in and requirements of Onshore Oil & Gas Order Number 2.

#### **Proposed Casing & Cementing Program:** 4.

A. Casing Program: All New

Hole Size	Casing Size	Wt./Ft.	Grade	Joint	Depth Set
					(MD)
20"	14" O.D.				40' (GL)
11"	8-5/8"	24#	J-55	ST&C	0 – 1,716' (KB) est.
7-7/8"	4-1/2"	11.6#	N-80	LT&C	0 – 582Q' (KB)

The surface casing will have guide shoe, 1 joint, insert float collar. Centralize the shoe joint with bowspring centralizers in the middle and top of the joint and the next16 joints Casing string(s) will be pressure tested to 0.22 psi/foot of casing string length or 1500 psi, whichever is greater (not to exceed 70% of the internal yield strength of the casing), after cementing and prior to drilling out from under the casing shoe.

## **B.** Casing Design Parameters:

	Depth (MD)	Casing	Collapse(psi)/SF	Burst (psi)/SF	Tension(mlbs)/SF
Ī	40' (GL)	14" OD			
Ī	1716' (KB)	8-5/8", 24#/ft, J55, STC	1370/1.52(a)	2950/3.28(b)	244/5.81(c)
Ī	5820' (KB)	4-1/2", 11.6#/ft, N-80, LTC	6350/2.54 (d)	7780/3.38 (e)	223/4.65(f)

- (a.) based on full evacuation of pipe with 8.6 ppg fluid on annulus
- (b.) based on 8.6 ppg gradient with no fluid on annulus
- (c.) based on casing string weight in 8.6 ppg mud
- (d.) based on full evacuation of pipe with 10.0 ppg fluid on annulus
- (e.) based on 9.2 ppg gradient, gas to surface, with no fluid on annulus, no gas gradient
- (f.) based on casing string weight in 9.2 ppg mud

#### PROPOSED CEMENTING PROGRAM

## Surface Casing (if well will circulate)-Cemented to surface

CASING	SLURRY	FT. of FILL	CEMENT TYPE	sxs	EXCESS (%)	WEIGHT (ppg)	YIELD (ft <sup>3</sup> /sx)
8-5/8"	Lead	1216	Premium cement + 16% gel + 0.25 pps celloflake	110	25%	11.1	3.50
8-5/8"	Tail	500	Premium cement + 2% CaC <sub>2</sub> + 0.25 pps celloflake	138	25%	15.8	1.15

A cement top job is required if cement fallback is greater than 10' below ground level. Top job (weight 15.8 ppg, yield 1.15 ft<sup>3</sup>/sx) cement will be premium cement w/ 3% CaCl<sub>2</sub>.+0.25 pps celloflake. Volume as required

## Surface Casing (if well will not circulate) - Cemented to surface

CASING	SLURRY	FT. of FILL	CEMENT TYPE	sxs	EXCESS (%)	WEIGHT (ppg)	YIELD (ft <sup>3</sup> /sx)
8-5/8"	Lead	500	Premium cement + 2% CaCl <sub>2</sub> + 0.25 pps celloflake	138	25	15.8	1.15
8-5/8"	Top job	As req.	Premium cement + 3% CaCl <sub>2</sub> + 0.25 pps celloflake	As Req.		15.8	1.15

## Production Casing and Liner - Cemented TD to 300' above base of surface casing

CASING	SLURRY	FT. of FILL	CEMENT TYPE	SXS	EXCESS (%)	WEIGHT (ppg)	YIELD (ft³/sx)
4-1/2"	Lead	214	Class "G" + 5% NaCl + 12% Gel + 0.25 pps celloflake + 0.2% antifoam + 0.25% fluid loss + 1% extender	21	25	11.0	3.3
4-1/2"	Tail	3185	50/50 POZ Class G + 2% gel +1% CaCl <sub>2</sub> + 0.2% dispersant + 0.2% fluid loss + 0.1% antifoam	<b>581</b>	25 (med 12)30	14.3	1.56

Cement volumes for the 4-1/2" Production Casing will be calculated to provide a top of cement to 300' above base of surface casing. Cement volumes are approximate and were calculated under the assumption that a gauge hole will be achieved. Actual cement volumes may vary due to variations in the actual hole size and will be determined by running a caliper log on the drilled hole. Actual cement types may vary due to hole conditions and cement contractor used.

All waiting on cement (WOC) times will be adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

## 5. <u>Drilling Fluids (mud) Program:</u>

Interval	Mud Weight	Fluid Loss	Viscosity	Mud Type
(MD)				
0' - 1716' (KB)		No cntri		Air/mist
1.716'-3000' (KB)	8.4-8.6	No cntrl	28-36	Water
3000'-5820' (KB)	8.8-9.8	8 - 10 ml	32-42	Water/Gel

Sufficient mud material(s) to maintain mud properties, control lost circulation and contain a blowout will be available at the well site during drilling operations.

## 6. <u>Evaluation Program:</u>

Tests:

No tests are currently planned.

Coring:

No cores are currently planned.

Samples:

No sampling is currently planned.

## Logging

- Dual Induction SFL /Gamma Ray/Caliper/SP/TDLT/CNL/ML TD to Base Surface Casing
- Cement Bond Log / Gamma Ray:
   TD to Base of Surface Casing or Top of Cement if below Base of Surface Casing

Stimulation: A stimulation or frac treatment will be designed for completion of this well based on openhole log analysis. The drill site, as approved, will be sufficient size to accommodate all completion activities.

## 7. Abnormal Conditions:

No abnormal temperatures or pressures are anticipated. No  $H_2S$  has been encountered or known to exist from previous wells drilled to similar depths in the general area.

Maximum anticipated bottom hole pressure equals approximately 2,504 psi (calculated at 0.52psi/foot of hole) and maximum anticipated surface pressure equals approximately 1,445 psi (anticipated bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot of hole).

## 8. Anticipated Starting Dates:

• Anticipated Commencement Date- Within one year of APD issue.

Drilling Days Approximately 10 days

• Completion Days - Approximately 10 days

• Anticipate location construction within 30 days of permit issue.

## 9. Variances:

None anticipated

## 10. Other:

A Cultural Resource Inventory and Paleontology reconnaissance shall be conducted for the well location, access route and pipeline. The reports shall be submitted to the Division of Oil, Gas and Mining and the School and Institutional Trust lands Administration upon their receipt.

Single Shot directional surveys will be dropped every 2000 feet to monitor hole angle.

Directions to the Well Pad for: Southam Canyon 10-25-43-32 Southam Canyon 10-25-44-32

Pad Location: NESE of Sec. 32, T10S, R25E, S.L.B.&M.

Beginning at the city of Bonanza, Utah. Leave the city of Bonanza heading south on U.S. Highway 45, which becomes a paved road, for a distance of approximately 3.7 miles where the road turns left at a gaging station. Do not turn left. Continue southeasterly on the same road for a distance of 5.9 miles, where there is a fork in the road. Turn left, and proceed for a distance of approximately 1.2 miles. Turn right and bear westerly approximately 0.2 miles to the beginning of the proposed access. Thence proceed southerly for approximately 3,430 feet (0.6 miles) along the proposed access to the proposed well pad.

## **Enduring Resources, LLC**

### **Southam Canyon 10-25-44-32**

SE-SE 32-10S-25E (Bottom Hole Location) NE-SE 32-10S-25E (Surface Location) Uintah County, Utah State Lease: ML-47065

## **MULTI-POINT SURFACE USE & OPERATIONS PLAN**

## 1. Existing Roads:

Directions to the Southam Canyon 10-25-44-32 Well Pad.

Beginning at the city of Bonanza, Utah. Leave the city of Bonanza heading south on U.S. highway 45, which becomes a paved road, for a distance of approximately 3.7 miles where the road turns left at a gaging station. Do not turn left. Continue southeasterly on the same road for a distance of 5.9 miles, where there is a fork in the road. Turn left, and proceed for a distance of approximately 1.2 miles. Turn right and bear westerly approximately 0.2 miles to the beginning of the proposed access. Thence proceed southerly for approximately 3,430 feet (0.6 miles) along the proposed access to the proposed well pad.

## 2. Planned Access Roads:

The proposed access road will be approximately 3,140 feet of new construction all onlease. Off-lease access will be 290 feet of construction. There is a Right Of Way pending with the BLM.

### ALL NEW CONSTRUCTION IS ON SITLA AND BLM LANDS.

The proposed access road will be utilized to transport personnel, equipment and supplies to and from the proposed well site during drilling, completion and production operations. The road will be utilized year round.

The access road will be crowned 2% to 3%, ditched and constructed with a running surface of 18 feet and a maximum disturbed width of 30 feet right-of-way. Maximum grade of road is 5% or less. Graveling or capping the roadbed will be performed as necessary to provided a well constructed, safe road. No fence crossings, culverts, turnouts, cattle guards or major cuts and fills are required. Prior to construction or upgrading, the proposed road shall be cleared of any snow and allowed to dry completely.

Surface disturbance and vehicular traffic will be limited to the proposed location and proposed access route. Any additional area needed will be approved in advance. All construction shall be in conformance with the standards outlined in the BLM and Forest Service publication: <u>Surface Operating Standards for Oil and Gas Exploration and Development.</u> 1989.

The road surface and shoulders will be kept in a safe usable condition and will be maintained in accordance with the original construction standards. All drainage ditches will be kept clear and free flowing and will be maintained according to original



construction standards. The access road surface will be kept free of trash during operations. All traffic will be confined to the approved disturbed surface. Road drainage crossings shall be designed so they will not cause siltation or accumulation of debris in the drainage crossing nor shall the drainages be blocked by the road bed. Erosion of drainage ditches by runoff water shall be prevented by diverting water off at frequent intervals by means of cutouts. Upgrading shall not be allowed during muddy conditions. Should mud holes develop, they shall be filled in and detours around them avoided. When snow is removed from the road during the winter months, the snow shall be pushed outside of the borrow ditches and the turnouts kept clear so that snowmelt will be channeled away from the road.

# 3. <u>Location of Existing Wells within a One-Mile radius (See "Topo" Map "C" attached):</u>

The following wells are wells located within a one (1) mile or greater radius of the proposed location.

a. None: Water Wells:

b. None: Injection Wells:

c. None: Producing Wells:

d. None: Drilling Wells:

e. None: Shut-in Wells:

f. None: Temporarily Abandoned Wells:

g. None: Disposal Wells:

h. None: Abandoned Wells:

i. None: Dry Holes:

j. None: Observation Wells:

k. (10): Pending (staked) Wells:

i. Enduring has ten other wells staked in this section.

## 4. <u>Location of Existing and/or Proposed Facilities:</u>

All production facilities will be located on the disturbed portion of the well pad and at a minimum of 25 feet from the toe of the back slope or the top of the fill slope.

A dike will be constructed completely around those production facilities which contain fluids (i.e. production tanks, produced water tanks and/or heater treater). These dikes will be constructed of compacted subsoil, be impervious, hold 100% of the capacity of the largest tank and be independent of the back cut.

All permanent (on site for six months or longer) above the ground structures constructed or installed, including pumping units, will be painted a flat, non-reflective, earth tone color to match one of the standard environmental colors, as determined by the Rocky Mountain Five State Inter-Agency Committee

All facilities will be painted within 6 months of installation. The color shall be designated by DOG&M and SITLA. Facilities required to comply with the Occupational Safety and Health Act (OSHA) will be excluded.



Any necessary pits will be properly fenced to protect livestock and prevent wildlife entry.

Gas Gathering Pipeline for this well will be:

6,455' Surface Pipeline On-Lease SITLA -0- Surface Pipeline Off-Lease n/a

If this well is capable of economic production, a 4" (or less) steel surface gas gathering line and related equipment shall be installed. The surface gas gathering line shall be in use year round. A total of approximately less than 6,455 feet of surface gas gathering pipeline shall be laid on the surface to minimize surface disturbance:

The proposed pipeline will begin at the well site; and be laid on the surface next to the new access road to tie-in to a steel surface pipeline that is located next to the county road.

The meter run will be housed. The gas gathering line will be buried or anchored down from the wellhead to the meter.

Upon plugging and abandonment, the gas gathering line will be removed and the disturbed area will be re-contoured and restored as near as practical to the original condition. If necessary, re-seeding operations will be performed after completion of other reclamation operations.

## 5. Location and Type of Water Supply:

Water will be purchased from American Gilsonite from the following source. Water Right No. 49-222, Application/Claim No. A29909/a4958, Certificate No. 9915 ("AGC Water Right"). The AGC Water Right consists of nineteen underground water wells located in Sec.2, T10S, R24E, SLBM, piped to and stored in a cistern located in Section 25, T9S, R24E.

Water will be hauled to the location over the roads marked on "Topo" Maps "A" and "B."

No water well is to be drilled on this lease.

## 6. Source of Construction Materials:

Surface and subsoil materials in the immediate area will be utilized for location and access road construction.

Any gravel will be obtained from a commercial source; however, gravel sized rock debris associated with location and access road construction may be used as access road surfacing material.



## 7. <u>Methods of Handling Waste Materials:</u>

Drill cuttings will be contained and buried in the reserve pit.

Drilling fluids, including salts and chemicals, will be contained in the reserve pit will be removed and disposed of at an approved waste disposal facility within 120 days after drilling is terminated.

The reserve pit will be constructed on the location and will not be located within natural drainage, where a flood hazard exits or surface runoff will destroy or damage the pit walls. The reserve pit will be constructed so that it will not leak, brake or allow discharge of liquids.

The reserve pit will be lined with ¼ felt and a minimum of 16 mm plastic with sufficient bedding used to cover any rocks. The liner will overlap the pit walls and be covered with dirt and/or rocks to hold it in place. No trash or scrap that could puncture the will be disposed of in the pit.

A chemical portable toilet will be furnished with the drilling rig. The toilet will be replaced periodically utilizing a licensed contractor to transport by truck the portable chemical toilet so that its contents can be delivered to the Vernal Wastewater Treatment Facility in accordance with state and county regulations.

Garbage, trash and other waste materials will be collected in a portable, self-contained, fully enclosed trash cage during operations. No trash well is burned on location.

All debris and other waste material not contained in the trash cage will be cleaned up and removed from the location immediately after removal of the drilling rig.

Any open pits will be fenced during the operations. The fencing will be maintained until such time as the pits are backfilled.

No chemicals subject to reporting under SARA Title III (hazardous materials) in an amount greater than 10,000 pounds will be used, produced, stored, transported or disposed of in association with the drilling, completion or testing of this well. Furthermore, no extremely hazardous substances, as defined in 40 CFR 355, in threshold planning quantities, will be used, produced, stored, transported or disposed of in association with the drilling, completion or testing of this well.

Produced oil will be stored in an oil tank and then hauled by truck to a crude purchaser facility. Any produced water from the proposed well will be contained in a water tank and will then be hauled by truck to an approved disposal site.

## 8. **Ancillary Facilities:**

During drilling operations, approximately 20 days, the site will be a manned camp. Three or four additional trailers will be on location to serve as the crews' housing and eating facilities. These will be located on the perimeter of the pad site within the topsoil



stockpiles. Refer to Sheet 4.

## 9. Well Site Layout: (Refer to Sheets #2, #3, and #4)

The attached Location Layout Diagrams described drill pad cross-sections, cuts and fills and locations of the mud tanks, reserve pit, flare pit, pipe racks, trailer parking, spoil dirt stockpile(s) and surface material stockpiles(s).

Please see the attached diagram for rig orientation and access roads.

The top soil will be windrowed rather than piled. It will be reseeded and track walker at the time the location is constructed. Seeding will be with the determined during the onsite. (Refer to "Seed Mixture for Windrowed Top Soil Will included:" following herein.

The top soil removed from the pit area will be store separately and will not be reseeded until the pit is reclaimed.

All pits shall be fence to the following minimum standards:

- a. 39 inch net wire shall be used with at least one strand of barbed wire on top of the net wire. Barbed wire is not necessary if pipe or some type of reinforcement rod is attached to the top of the entire fence.
- b. The net wire shall be no more than 2 inches above the ground. The barbed wire shall be 3 inches over the new wire. Total height of the fence shall be at least 42 inches.
- c. Corner posts shall be cemented and/or braced in such a manner to keep the fence tight at all times.
- d. Standard steel, wood or pipe posts shall be used between the corner braces. Maximum distance between any two fence posts shall be no greater than 16 feet.
- e. All wire shall be stretched by, using a stretching device, before it is attached to corner posts.
- f. The reserve pit fencing will be on three sides during drilling operations and on the fourth side when the rig moves off location. Pits will be fenced and maintained until cleanup.
- g. Location size may change prior to drilling the well due to the current rig availability. If the proposed location is not large enough to accommodate the drilling, the location will be re-surveyed and a Form 9 will be submitted.

## 10. Plans for Surface Reclamation:

### **Producing Location:**

- Immediately upon well completion the location and surrounding area will be cleared of all unused tubing, equipment, materials, trash and debris not required for production.
- b. Immediately upon well completion any hydrocarbons in the pit shall be removed in accordance with 40CFR 3162.7.



- c. Before any dirt work associated with location restoration takes place, the reserve pit shall be as dry as possible. All debris in it will be removed. Other waste and spoil materials will be disposed of immediately upon completion of operations.
- d. The reserve pit **and** that portion of the location not needed for production facilities/operations will be re-contoured to the approximated natural contours. The reserve pit will be reclaimed within 90 days from the date of well completion, weather permitting.
- e. To prevent surface water(s) from standing (ponding) on the reclaimed reserve pit area, final reclamation of the reserve pit will consist of "mounding" the surface 3 feet above surrounding round surface to allow the reclaimed pit area to drain effectively.
- f. Upon completion of back filling, leveling and re-contouring, the stockpiled topsoil will be spread evenly over the reclaimed area(s).

## **Dry Hole/Abandoned Location:**

- i. Abandoned well sites, roads and other disturbed areas will be restored as nearly as practical to their original condition. Where applicable, these conditions include the re-establishment of irrigation systems, the re-establishment of appropriate soil conditions and re-establishment of vegetation as specified.
- ii. All disturbed surfaces will be re-contoured to the approximated natural contours with reclamation of the well pad and access road to be performed as soon as practical after final abandonment. If necessary, re-seeding operations will be performed after completion of other reclamation operations.

## Seed Mixture for Windrowed Top Soil Will Included:

To be provided by the DOG&M and/or SITLA.

## 11. Surface Ownership: Location, Access and Pipeline Route:

Wellsite: S

SITLA

Access:

SITLA, BLM

Pipeline:

SITLA

#### 12. Other Information

## On-site Inspection for Location, Access and Pipeline Route:

The on-site will be scheduled by SITLA and DOG&M.

## **Special Conditions of Approval:**



- Tanks and Production Equipment shall be painted Dark Olive Black.
- Surface Gathering Pipeline shall be 4" or less

## **Archeology:**

a. A Cultural Resource Inventory Report is pending and to be prepared by Montgomery Archaeological Consultants.

## Paleontology:

a. A Paleontology Reconnaissance Report is pending and to be prepared by Intermountain Paleo-Consulting.

If, during operations, any archaeological or historical sites, or any objects of antiquity (subject to the Antiquities Act of June 8, 1906) are discovered, all operations which would affect such sites will be suspended and the discovery reported promptly to the surface management agency.

## 13, <u>Lessee's or Operator's Representatives:</u>

### Representatives:

Alvin R. (Al) Arlian T
Landman – Regulatory Specialist D
Enduring Resources, LLC E
475 17<sup>th</sup> Street, Suite 1500 4
Denver, Colorado 80202 D
Office Tel: 303-350-5114

Fax Tel: 303-573-0461

aarlian@enduringresources.com

Teme Singleton
Drilling Engineer

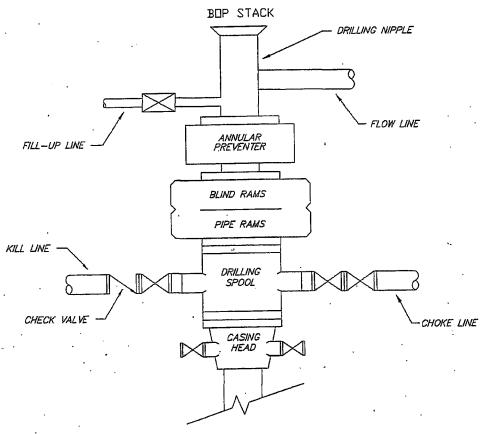
Enduring Resources, LLC 475 17<sup>th</sup> Street, Suite 1500 Denver, Colorado 80202 Office Tel: 303-573-5711

Fax Tel: 303-573-0461

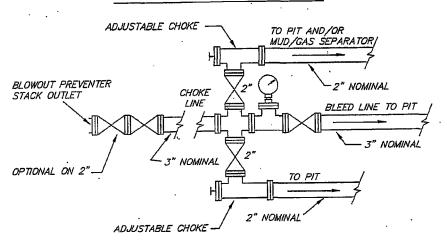
tsingleton@enduringresources.com

## **ENDURING RESOURCES, LLC**

TYPICAL 3,000 p.s.i.
BLOWOUT PREVENTER SCHEMATIC



TYPICAL 3,000 p.s.i.
CHOKE MANIFOLD SCHEMATIC





RKB Elevation: 5875.0

End Build

Ground Elevation: 5858.8

KOP

1000-

True Vertical Depth [1000ft/in]

## **ENDURING RESOURCES** Southam Canyon 10-25-44-32 NE/SE Sec. 32, T10S, R25E **Uintah County, Utah**



					SECTION I	DETAILS				
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1 2 3 4 5 6	0.00 400.00 1168.24 2633.43 3593.72 5258.72	0.00 0.00 38.41 38.41 0.00 0.00	184.14 184.14 184.14 184.14 184.14 184.14	0.00 400.00 1111.97 2260.04 3150.00 4815.00	0.00 0.00 -247.37 -1155.33 -1464.54 -1464.54	0.00 0.00 -17.91 -83.63 -106.01 -106.01	0.00 0.00 5.00 0.00 4.00 0.00	0.00 0.00 184.14 0.00 180.00 184.14	0.00 0.00 248.02 1158.35 1468.37 1468.37	KOP End Build Start Drop End Drop TD

WELL DETAILS Name +N/-S +E/-W Northing Easting Latitude Longitude Slot Southarn Canyon 10-25-44-32 0.00 0.00 7142677.99 2308688 52 39°54'14.470N 109°07'03.110W N/A

#### FIELD DETAILS

Uintah, Utah Utah Central Zone U.S.A.

Geodetic System: US State Plane Coordinate System 1983 Ellipsoid: GRS 1980 Zone: Utah, Central Zone Magnetic Model: igrf2005

System Datum: Mean Sea Level Local North: True North

#### SITE DETAILS

NE/SE 32-10S-25E Sec. 32, T10S, R25E, Uintah County, Utah 2123 FSL & 555 FEL

Site Centre Latitude: 39°54'14.470N Longitude: 109°07'03.110W

Ground Level: 5803,70
Positional Uncertainty: 0.00
Convergence: 1.53

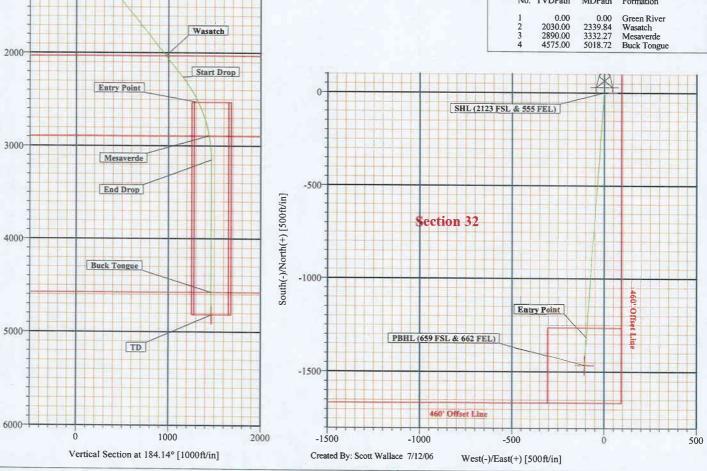
#### TARGET DETAILS

+N/-S +E/-W Shape

10-25-44-32 Target 4815.00 -1464.54 -106.01 Rectangle (400x400)

#### FORMATION TOP DETAILS

No. TVDPath **MDPath** Formation 0.00 2030.00 2890.00 Mesaverde



# Weatherford International **Planning Report**

**Enduring Resources** Company: Field: Uintah, Utah

NE/SE 32-10S-25E Southarn Canyon 10-25-44-32

Well: Wellpath:

7/12/2006 Date:

Time: 09:12:21

Page: Co-ordinate(NE) Reference: Well: Southam Canyon 10-25-44-32

1

Vertical (TVD) Reference: SITE 5820.0

Section (VS) Reference: Plan:

Well (0.00N,0.00E,184.14Azi)

Plan #1

Field: Uintah, Utah

Utah Central Zone

U.S.A.

Map System: US State Plane Coordinate System 1983

Geo Datum: GRS 1980 Sys Datum: Mean Sea Level Map Zone:

Utah, Central Zone

Coordinate System: Geomagnetic Model: Well Centre igrf2005

Site:

Site:

NE/SE 32-10S-25E

Sec. 32, T10S, R25E, Uintah County, Utah

2123 FSL & 555 FEL

**Site Position:** Geographic From:

Position Uncertainty: **Ground Level:** 

0.00 ft 5803.70 ft Northing: 7142677.99 ft Easting:

2308688.52 ft

Latitude: Longitude:

39 14.470 N 109 3.110 W

North Reference: True **Grid Convergence:** 1.53 deg

Well:

Southam Canyon 10-25-44-32

Well Position:

+N/-S +E/-W 0.00 ft Northing: 0.00 ft Easting:

7142677.99 ft 2308688.52 ft Latitude:

Slot Name:

39 54 14.470 N

**Position Uncertainty:** 

0.00 ft

Longitude:

**Drilled From:** 

109 7 3.110 W

Wellpath:

Magnetic Data:

**Current Datum:** 

7/11/2006

0.00

52879 nT

Field Strength: Vertical Section: Depth From (TVD)

+N/-Sft 0.00

Height 5820.00 ft

Tie-on Depth: **Above System Datum:** Declination:

Mag Dip Angle: +E/-W

Surface 0.00 ft Mean Sea Level

11.52 deg 66.00 deg Direction

ft deg 0.00 184.14

Plan:

Principal:

Plan #1 Yes

Date Composed: Version:

7/12/2006

Tied-to:

From Surface

#### **Plan Section Information**

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	184.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	184.14	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1168.24	38.41	184.14	1111.97	-247.37	-17.91	5.00	5.00	0.00	184.14	
2633.43	38.41	184.14	2260.04	-1155.33	-83.63	0.00	0.00	0.00	0.00	
3593.72	0.00	184.14	3150.00	-1464.54	-106.01	4.00	-4.00	0.00	180.00	
5258.72	0.00	184.14	4815.00	-1464.54	-106.01	0.00	0.00	0.00	184.14	10-25-44-32 Target

### Section 1: Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	
0.00 400.00	0.00 0.00	184.14 184.14	0.00 400.00	0.00 0.00	0.00 0.00	0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 184.14	

#### Section 2: Start Build 5.00

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg
500.00	5.00	184.14	499.87	-4.35	-0.31	4.36	5.00	5.00	0.00	0.00
600.00	10.00	184.14	598.99	-17.36	-1.26	17.41	5.00	5.00	0.00	0.00
700.00	15.00	184.14	696.58	-38.94	-2.82	39.05	5.00	5.00	0.00	0.00
800.00	20.00	184.14	791.93	-68.93	-4.99	69.11	5.00	5.00	0.00	0.00
900.00	25.00	184.14	884.28	-107.08	-7.75	107.36	5.00	5.00	0.00	0.00
1000.00	30.00	184.14	972.96	-153.12	-11.08	153.52	5.00	5.00	0.00	0.00
1100.00	35.00	184.14	1057.27	-206.70	-14.96	207.24	5.00	5.00	0.00	0.00
1168.24	38.41	184.14	1111.97	-247.37	-17.91	248.02	5.00	5.00	0.00	0.00



Company: Enduring Resources
Field: Uintah, Utah
Site: NE/SE 32-10S-25E
Well: Southam Canyon 10-25-44-32

Wellpath:

Page:

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Date: 7/12/2006 Time: 09:12:21 Page
Co-ordinate(NE) Reference: Well: Southam Canyon 10-25-44-32
Vertical (TVD) Reference: SITE 5820.0
Well (0.00N,0.00E,184.14Azi)
Plan: Plan #1

Section	3:	Start	Hold

	MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	
	1200.00	38.41	184.14	1136.86	-267.05	-19.33	267.75	0.00	0.00	0.00	0.00	
	1300.00	38.41	184.14	1215.21	-329.02	-23.82	329.88	0.00	0.00	0.00	0.00	
<b>!</b>	1400.00	38.41	184.14	1293.57	-390.99	-28.30	392.01	0.00	0.00	0.00	0.00	
	1500.00	38.41	184.14	1371.93	-452.96	-32.79	454.14	0.00	0.00	0.00	0.00	
	1600.00	38.41	184.14	1450.28	-514.93	-37.27	516.27	0.00	0.00	0.00	0.00	
	1700.00	38.41	184.14	1528.64	-576.90	-41.76	578.41	0.00	0.00	0.00	0.00	
	1800.00	38.41	184.14	1607.00	-638.86	-46.24	640.54	0.00	0.00	0.00	0.00	
	1900.00	38.41	184.14	1685.35	-700.83	-50.73	702.67	0.00	0.00	0.00	0.00	
H	2000.00	38.41	184.14	1763.71	-762.80	-55.21	764.80	0.00	0.00	0.00	0.00	
li	2100.00	38.41	184.14	1842.07	-824.77	-59.70	826.93	0.00	0.00	0.00	0.00	
H	2200.00	38.41	184.14	1920.42	-886.74	-64.18	889.06	0.00	0.00	0.00	0.00	
	2300.00	38.41	184.14	1998.78	-948.71	-68.67	951.19	0.00	0.00	0.00	0.00	\
h	2339.84	38.41	184.14	2030.00	-973.40	-70.46	975.95	0.00	0.00	0.00	0.00	
H	2400.00	38.41	184.14	2077.14	-1010.68	-73.16	1013.32	0.00	0.00	0.00	0.00	
П	2500.00	38.41	184.14	2155.49	-1072.65	-77.64	1075.45	0.00	0.00	0.00	0.00	
П	2600.00	38.41	184.14	2233.85	-1134.61	-82.13	1137.58	0.00	0.00	0.00	0.00	
	2633.43	38.41	184.14	2260.04	-1155.33	-83.63	1158.35	0.00	0.00	0.00	0.00	

#### Section 4: Start Drop -4.00

MCD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	
2700.00	35.75	184.14	2313.15	-1195.36	-86.52	1198.49	4.00	-4.00	0.00	-180.00	· · · · · · · · · · · · · · · · · · ·
2800.00	31.75	184.14	2396.28	-1250.76	-90.53	1254.03	4.00	-4.00	0.00	180.00	
2900.00	27.75	184.14	2483.08	-1300.24	-94.11	1303.64	4.00	-4.00	0.00	180.00	
2952.52	25.65	184.14	2530.00	-1323.77	-95.82	1327.24	4.00	-4.00	0.00	180.00	
3000.00	23.75	184.14	2573.14	-1343.56	-97.25	1347.07	4.00	-4.00	0.00	-180.00	
3100.00	19.75	184.14	2666.00	-1380.51	-99.92	1384.12	4.00	-4.00	0.00	180.00	
3200.00	15.75	184.14	2761.22	-1410.91	-102.13	1414.60	4.00	-4.00	0.00	180.00	
3300.00	11.75	184.14	2858.33	-1434.61	-103.84	1438.36	4.00	-4.00	0.00	180.00	
3332.27	10.46	184.14	2890.00	-1440.81	-104.29	1444.58	4.00	-4.00	0.00	180.00	
3400.00	7.75	184.14	2956.87	-1451.49	-105.06	1455.29	4.00	-4.00	0.00	180.00	
3500.00	3.75	184.14	3056.35	-1461.48	-105.79	1465.31	4.00	-4.00	0.00	180.00	
3593.72	0.00	184.14	3150.00	-1464.54	-106.01	1468.37	4.00	-4.00	0.00	-180.00	

#### Section 5: Start Hold

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	
3600.00	0.00	184.14	3156.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
3700.00	0.00	184.14	3256.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
3800.00	0.00	184.14	3356.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
3900.00	0.00	184.14	3456.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
4000.00	0.00	184.14	3556.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
4100.00	0.00	184.14	3656.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
4200.00	0.00	184.14	3756.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
4300.00	0.00	184.14	3856.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
4400.00	0.00	184.14	3956.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
4500.00	0.00	184.14	4056.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
4600.00	0.00	184.14	4156.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
4700.00	0.00	184.14	4256.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
4800.00	0.00	184.14	4356.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
4900.00	0.00	184.14	4456.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
5000.00	0.00	184.14	4556.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
5018.72	0.00	184.14	4575.00	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
5100.00	0.00	184.14	4656.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
5200.00	0.00	184.14	4756.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	
5258.72	0.00	184.14	4815.00	-1464.54	-106.01	1468.37	0.00	0.00	0.00	184.14	



Company: Enduring Resources

Field: Site:

Uintah, Utah NE/SE 32-10S-25E Southam Canyon 10-25-44-32

Well: Wellpath:

Date: 7/12/2006 Time: 09:12:21 Page
Co-ordinate(NE) Reference: Well: Southam Canyon 10-25-44-32
Vertical (TVD) Reference: SITE 5820.0
Section (VS) Reference: Well (0.00N,0.00E,184.14Azi)
Plan: Plan #1

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Survey								-		
MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+ <b>E/-W</b> ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
400.00	0.00	184.14	400.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP
500.00	5.00	184.14	499.87	-4.35	-0.31	4.36	5.00	5.00	0.00	MWD
600.00	10.00	184.14	598.99	-17.36	-1.26	17.41	5.00	5.00	0.00	MWD
700.00	15.00	184.14	696.58	-38.94	-2.82	39.05	5.00	5.00	0.00	MWD
800.00	20.00	184.14	791.93	-68.93	-4.99	69.11	5.00	5.00	0.00	MWD
								0.00	0.00	
900.00	25.00	184.14	884.28	-107.08	-7.75	107.36	5.00	5.00	0.00	MWD
1000.00	30.00	184.14	972.96	-153.12	-11.08	153.52	5.00	5.00	0.00	MWD
1100.00	35.00	184.14	1057.27	-206.70	-14.96	207.24	5.00	5.00	0.00	MWD
1168.24	38.41	184.14	1111.97	-247.37	-17.91	248.02	5.00	5.00	0.00	End Build
1200.00	38.41	184.14	1136.86	-267.05	-19.33	267.75	0.00	0.00	0.00	MWD
1300.00	38.41	184.14	1215.21	220.02	22.00	200.00	0.00			
1400.00	38.41	184.14	1213.21	-329.02	-23.82	329.88	0.00	0.00	0.00	MWD
				-390.99	-28.30	392.01	0.00	0.00	0.00	MWD
1500.00	38.41	184.14	1371.93	-452.96	-32.79	454.14	0.00	0.00	0.00	MWD
1600.00	38.41	184.14	1450.28	-514.93	-37.27	516.27	0.00	0.00	0.00	MWD
1700.00	38.41	184.14	1528.64	-576.90	-41.76	578.41	0.00	0.00	0.00	MWD
1800.00	38.41	184.14	1607.00	-638.86	-46.24	640 54	0.00	0.00	0.00	A 41475
1900.00	38.41	184.14	1685.35	-038.86 -700.83		640.54	0.00	0.00	0.00	MWD
2000.00	38.41	184.14	1763.71		-50.73	702.67	0.00	0.00	0.00	MWD
				-762.80	-55.21	764.80	0.00	0.00	0.00	MWD
2100.00	38.41	184.14	1842.07	-824.77	-59.70	826.93	0.00	0.00	0.00	MWD
2200.00	38.41	184.14	1920.42	-886.74	-64.18	889.06	0.00	0.00	0.00	MWD
2300.00	38.41	184.14	1998.78	<b>-9</b> 48.71	-68.67	951.19	0.00	0.00	0.00	MWD
2339.84	38.41	184.14	2030.00	-973.40	-70.46	975.95	0.00	0.00		
2400.00	38.41	184.14	2077.14	-1010.68	-73.16	1013.32	0.00		0.00	Wasatch
2500.00	38.41	184.14	2155.49	-1072.65				0.00	0.00	MWD
2600.00	38.41				-77.64	1075.45	0.00	0.00	0.00	MWD
2000.00	30.41	184.14	2233.85	-1134.61	-82.13	1137.58	0.00	0.00	0.00	MWD
2633.43	38.41	184.14	2260.04	-1155.33	-83.63	1158.35	0.00	0.00	0.00	Start Drop
2700.00	35.75	184.14	2313.15	-1195.36	-86.52	1198.49	4.00	-4.00	0.00	MWD
2800.00	31.75	184.14	2396.28	-1250.76	-90.53	1254.03	4.00	-4.00	0.00	MWD
2900.00	27.75	184.14	2483.08	-1300.24	-94.11	1303.64	4.00	-4.00	0.00	MWD
2952.52	25.65	184.14	2530.00	-1323.77	-95.82	1327.24	4.00	-4.00	0.00	Entry Point
2000 00	00									
3000.00	23.75	184.14	2573.14	-1343.56	-97.25	1347.07	4.00	-4.00	0.00	MWD
3100.00	19.75	184.14	2666.00	-1380.51	-99.92	1384.12	4.00	-4.00	0.00	MWD
3200.00	15.75	184.14	2761.22	-1410.91	-102.13	1414.60	4.00	-4.00	0.00	MWD
3300.00	11.75	184.14	2858.33	-1434.61	-103.84	1438.36	4.00	-4.00	0.00	MWD
3332.27	10.46	184.14	2890.00	-1440.81	-104.29	1444.58	4.00	-4.00	0.00	Mesaverde
3400.00	7.75	184.14	2956.87	-1451.49	405.00	4455.00	4.00			
					-105.06	1455.29	4.00	<del>-</del> 4.00	0.00	MWD
3500.00	3.75	184.14	3056.35	-1461.48	-105.79	1465.31	4.00	-4.00	0.00	MWD
3593.72 3600.00	0.00	184.14	3150.00	-1464.54	-106.01	1468.37	4.00	-4.00	0.00	End Drop
	0.00	184.14	3156.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	MWD
3700.00	0.00	184.14	3256.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	MWD
3800.00	0.00	184.14	3356.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	MWD
3900.00	0.00	184.14	3456.28	-1464.54	-106.01				0.00	MWD
4000.00	0.00	184.14	3556.28	-1464.54		1468.37	0.00	0.00	0.00	MWD
4100.00	0.00	184.14			-106.01	1468.37	0.00	0.00	0.00	MWD
4200.00			3656.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	MWD
7200.00	0.00	184.14	3756.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	MWD
4300.00	0.00	184.14	3856.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	MWD
4400.00	0.00	184.14	3956.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	MWD
4500.00	0.00	184.14	4056.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	MWD
4600.00	0.00	184.14	4156.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	MWD
4700.00	0.00	184.14	4256.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	MWD
4000.00										
4800.00	0.00	184.14	4356.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	MWD
4900.00	0.00	184.14	4456.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	MWD
5000.00	0.00	184.14	4556.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	MWD
5018.72	0.00	184.14	4575.00	-1464.54	-106.01	1468.37	0.00	0.00	0.00	Buck Tongue

Company: Enduring Resources

Uintah, Utah NE/SE 32-10S-25E Field: Site:

Southam Canyon 10-25-44-32

Wellpath: 1

Well:

Co-ordinate(NE) Reference: Well: Southam Canyon 10-25-44-32
Vertical (TVD) Reference: SITE 5820.0
Section (VS) Reference: Well (0.00N,0.00E,184.14Azi)
Plan: Plan #1

MD	Incl	Azim	TVD	+N/-S	+E/-W	VS	DLS	Build	Turn	Tool/Comment
ft	deg	deg	ft	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	
5100.00	0.00	184.14	4656.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	MWD
5200.00	0.00	184.14	4756.28	-1464.54	-106.01	1468.37	0.00	0.00	0.00	MWD
5258.72	0.00	184.14	4815.00	-1464.54	-106.01	1468.37	0.00	0.00	0.00	10-25-44-32 Target

#### **Targets**

Name	Description Dip. Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	< Latitude> Deg Min Sec	< Longitude> Deg Min Sec
10-25-44-32 Tar -Rectangle (4 -Plan hit targe	00x400)	4815.00	-1464.54	-106.01	7141211.15	2308621.56	39 53 59.995 N	109 7 4.470 W

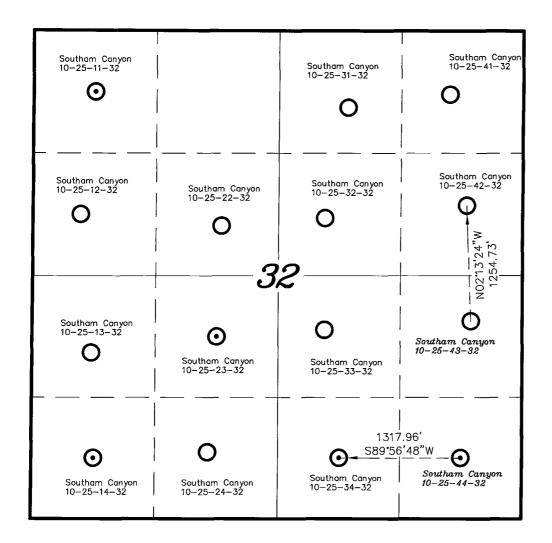
#### **Formations**

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
	0.00	Green River		0.00	0.00
2339.84	2030.00	Wasatch		0.00	0.00
3332.27	2890.00	Mesaverde		0.00	0.00
5018.72	4575.00	Buck Tongue		0.00	0.00

#### Annotation

MD ft	TVD ft	
400.00		SHL (2123 FSL & 555 FEL)
400.00	400.00	KOP
1168.24	1111.97	End Build
2633.43	2260.04	Start Drop
2952.52	2530.00	Entry Point
3593.72	3150.00	End Drop
5258.72	4815.00	TD

## T10S, R25E, S.L.B.&M



## ENDURING RESOURCES

SECTION DRILLING MAP SOUTHAM CANYON 10-25-43-32 SOUTHAM CANYON 10-25-44-32



### LEGEND

O = Vertical Well

Directional Well / Bottom Hole

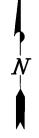
## TRI STATE LAND SURVEYING & CONSULTING

180 NORTH VERNAL AVE. - VERNAL, UTAH 84078 (435) 781-2501

DATE DRAWN: 10-27-05	SURVEYED BY: J.H.	SHEET
REVISED:	DRAWN BY: F.T.M.	1
NOTES:	SCALE: 1" = 1000'	OF 10

## ENDURING RESOURCES

WELL PAD INTERFERENCE PLAT SOUTHAM CANYON 10-25-43-32 SOUTHAM CANYON 10-25-44-32 Section 32, T10S, R25E, S.L.B.&M.



## TOP HOLE FOOTAGES

10-25-43-32 2143' FSL & 555' FEL 10-25-44-32 2123' FSL & 555' FEL

## BOTTOM HOLE FOOTAGES

10-25-43-32 VERTICAL 10-25-44-32 659' FSL & 662' FEL

> 10-25-43-32 10-25-44-32

> > (To Bottom Hole)

Note: Bearings are derived using true North.

# RELATIVE COORDINATES From top hole to bottom hole

WELL	NORTH	EAST
43-32	N/A	N/A
44-32	-1,465'	-106

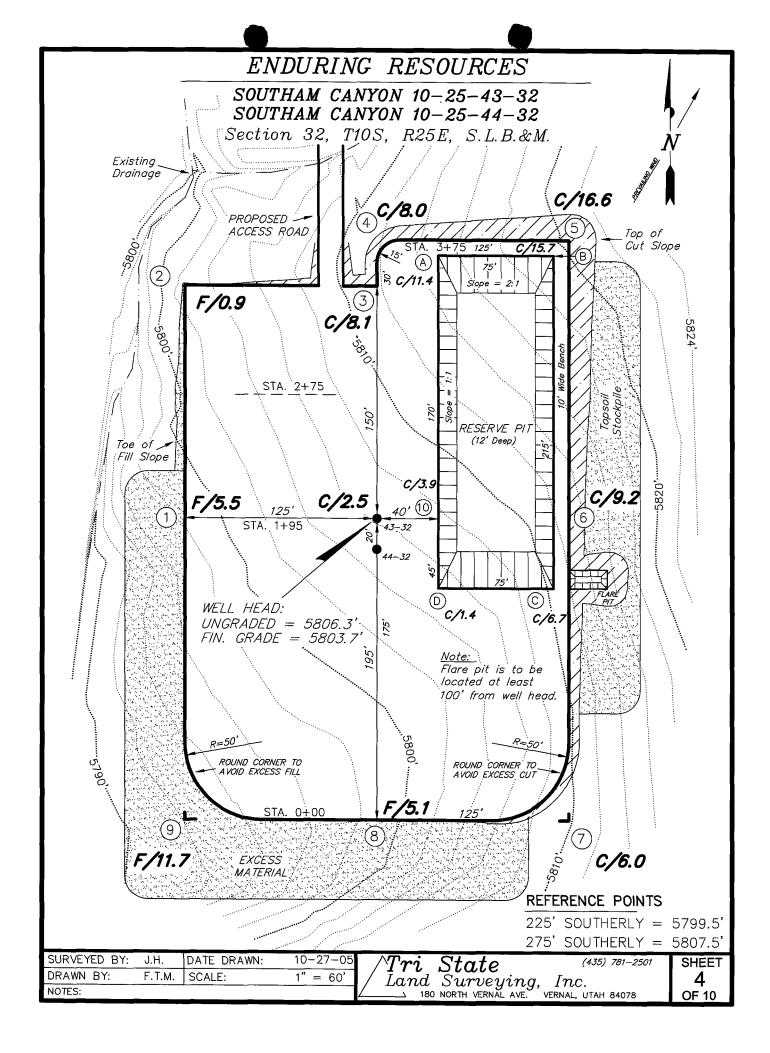
## LATITUDE & LONGITUDE Surface position of Wells (NAD 83)

WELL	LATITUDE	LONGITUDE
43-32	39° 54' 14.66"	109° 07' 03.11"
44-32	39° 54' 14.47"	109° 07' 03.11"

SURVEYED BY:	J.H.	DATE DRAWN:	10-27-05
DRAWN BY:	F.T.M.	SCALE:	1" = 60'
NOTES:			

	State		781–250
Land	Surveying,	Inc.	
	NORTH VERNAL AVE.		84078

SHEET 3 OF 10

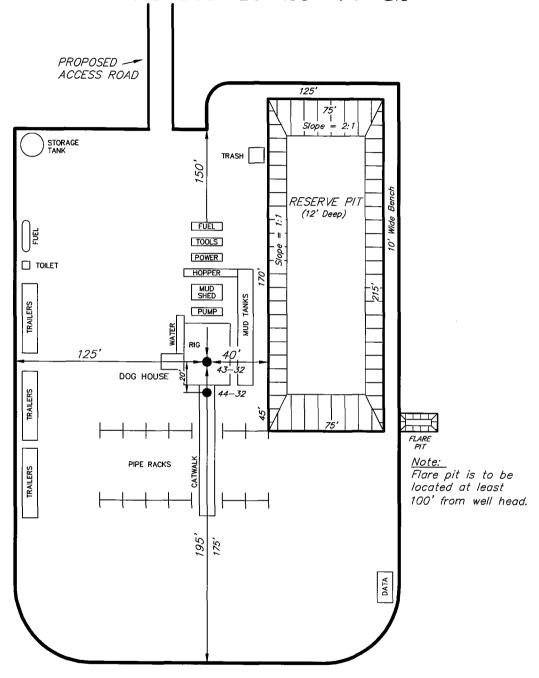


## ENDURING RESOURCES CROSS SECTIONS SOUTHAM CANYON 10-25-43-32 SOUTHAM CANYON 10-25-44-32 30, 11 STA. 3+75 1" = 60'30, 11 1" = 60'STA. 2+75 EXISTING FINISHED GRADE GRADE 30, П WELL HOLE 1" = 60'STA. 1+95 30, П 1" = 60'STA. 0+00 ESTIMATED EARTHWORK QUANTITIES (No Shrink or swell adjustments have been used) (Expressed in Cubic Yards) ITEM CUT **FILL** 6" TOPSOIL EXCESS NOTE: PAD 11,360 7,100 Topsoil is 4,260 not included in Pad Cut UNLESS OTHERWISE NOTED PIT 5,390 5,390 CUT SLOPES ARE AT 1:1 FILL SLOPES ARE AT 1.5:1 TOTALS 16,750 7,100 1,880 9,650

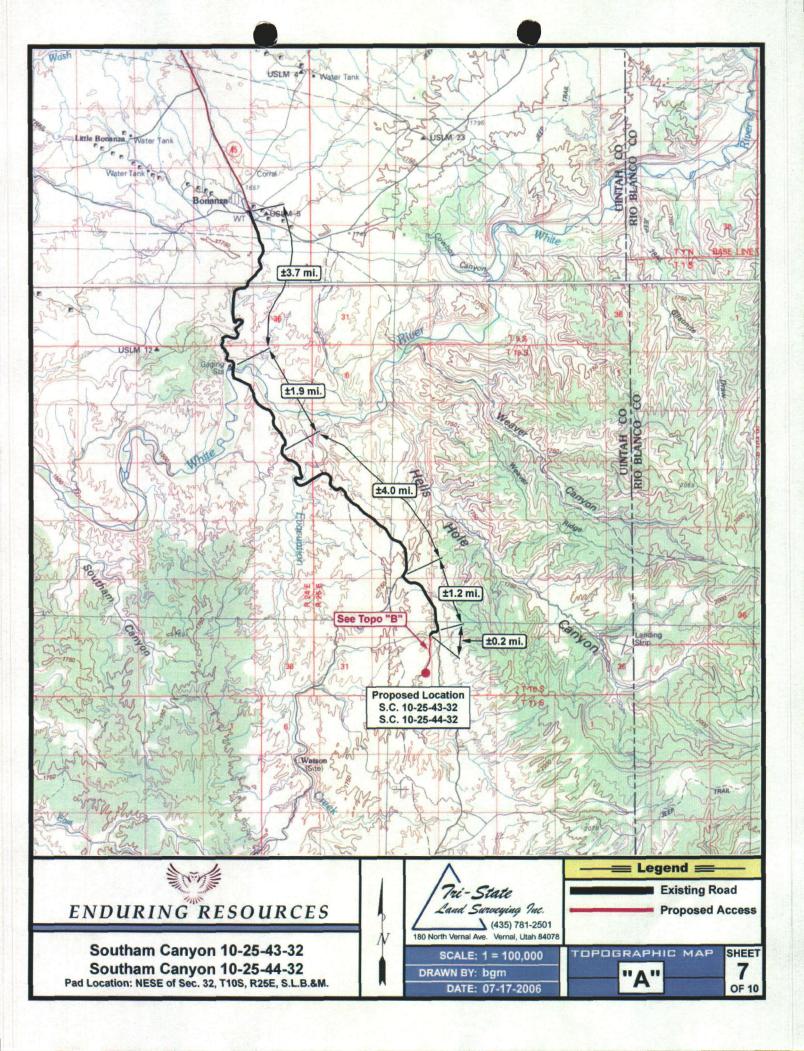
SURVEYED BY:	J.H.	DATE DRAWN:	10-27-05	$\wedge Tri$	State	(435) 781-2501	SHEET
DRAWN BY:	F.T.M.	SCALE:	1" = 60'	/ Land	~ .	. Inc.	5
NOTES:				/	O NORTH VERNAL AVE.	VERNAL, UTAH 84078	OF 10

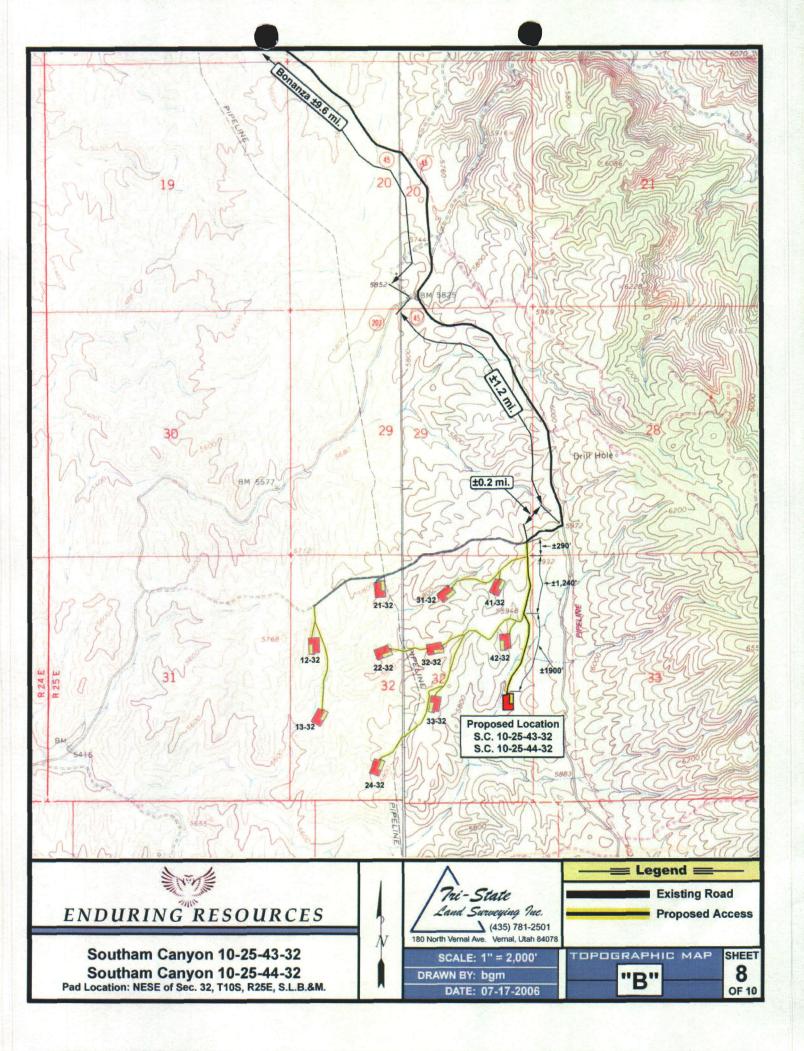
## ENDURING RESOURCES

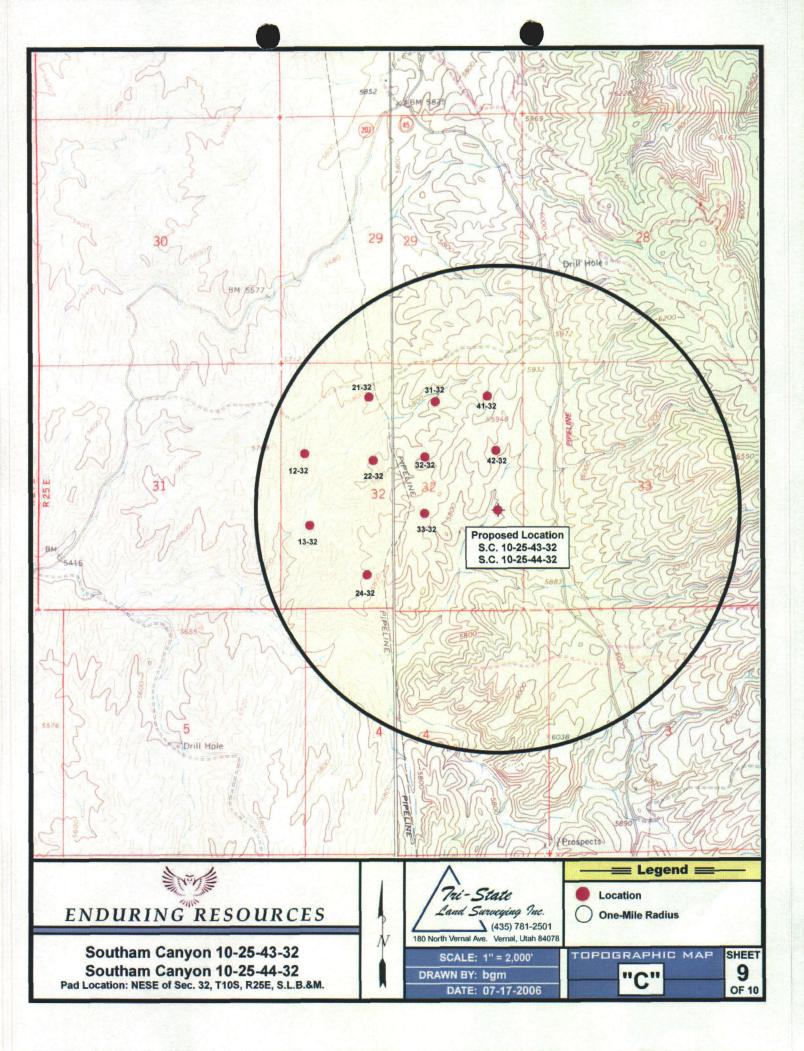
TYPICAL RIG LAYOUT
SOUTHAM CANYON 10-25-43-32
SOUTHAM CANYON 10-25-44-32

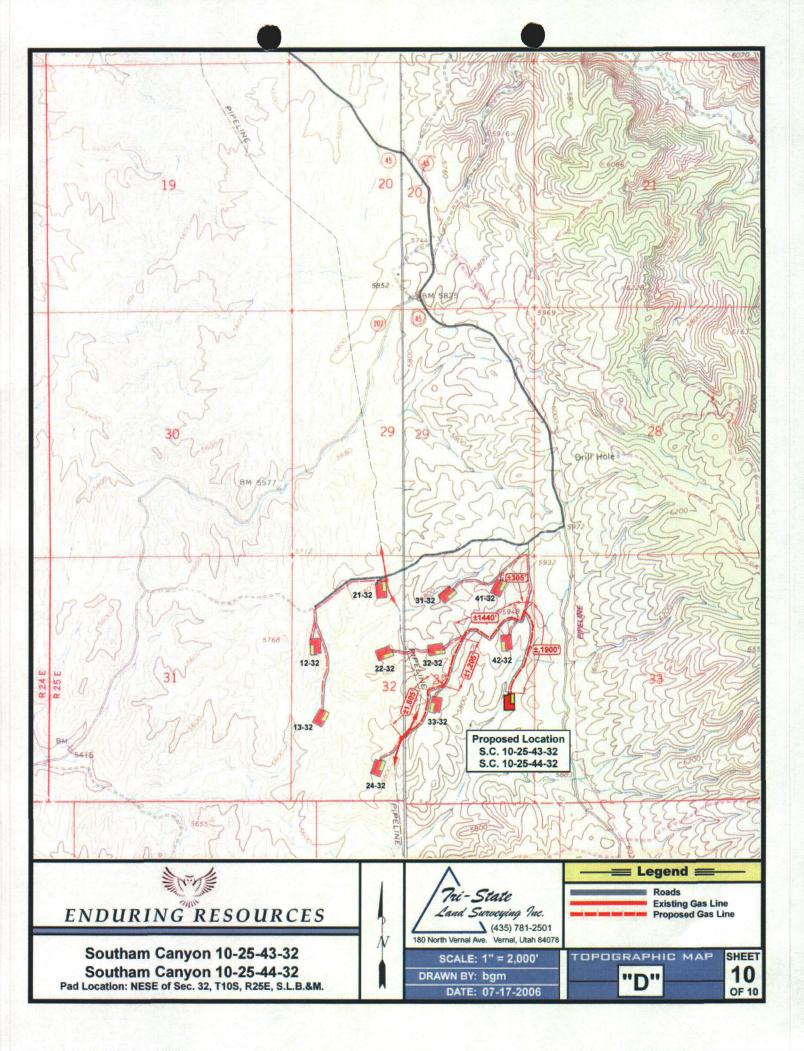


SURVEYED BY:	J.H.	DATE DRAWN:	10-27-05	↑Tri State	(435) 781-2501	SHEET
DRAWN BY:	F.T.M.	SCALE:	1" = 60'	Land Surveying.	Inc.	6
NOTES:				, , , , , , , , , , , , , , , , , , , ,	VERNAL, UTAH 84078	OF 10











皇帝/皇

ENDURING RESOURCES

S.C. 10-25-43-32 & S.C. 10-25-44-32 Pad Location: NESE of Sec. 32, T10S, R25E, S.L.B.&M.

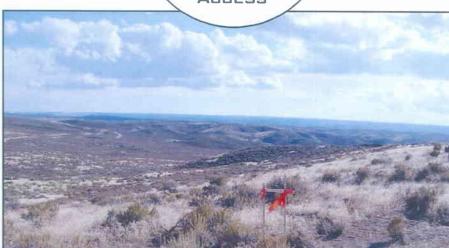
CENTER STAKE

Date Photographed: 11/15/2005

Date Drawn: 07/17/2006 Drawn By: bgm

Tri-State Land Surveying Inc. (435) 781-2501 180 North Vernal Ave. Vernal, Utah 84078

LOOKING SOUTH ACCESS







ENDURING RESOURCES

S.C. 10-25-43-32 & S.C. 10-25-44-32 Pad Location: NESE of Sec. 32, T10S, R25E, S.L.B.&M.

NORTH

Date Photographed: 11/15/2005

Date Drawn: 07/17/2006 Drawn By: bgm

Tri-State Land Surveying Inc. 180 North Vernal Ave. Vernal, Utah 84078

EAST





10万月

ENDURING RESOURCES

S.C. 10-25-43-32 & S.C. 10-25-44-32 Pad Location: NESE of Sec, 32, T10S, R25E, S.L.B.&M.

SOUTH

Date Photographed: 11/15/2005

Date Drawn: 07/17/2006 Drawn By: bgm

Tri-State Land Surveying Inc. (435) 781-2501 180 North Vernal Ave. Vernal, Utah 84078

WEST



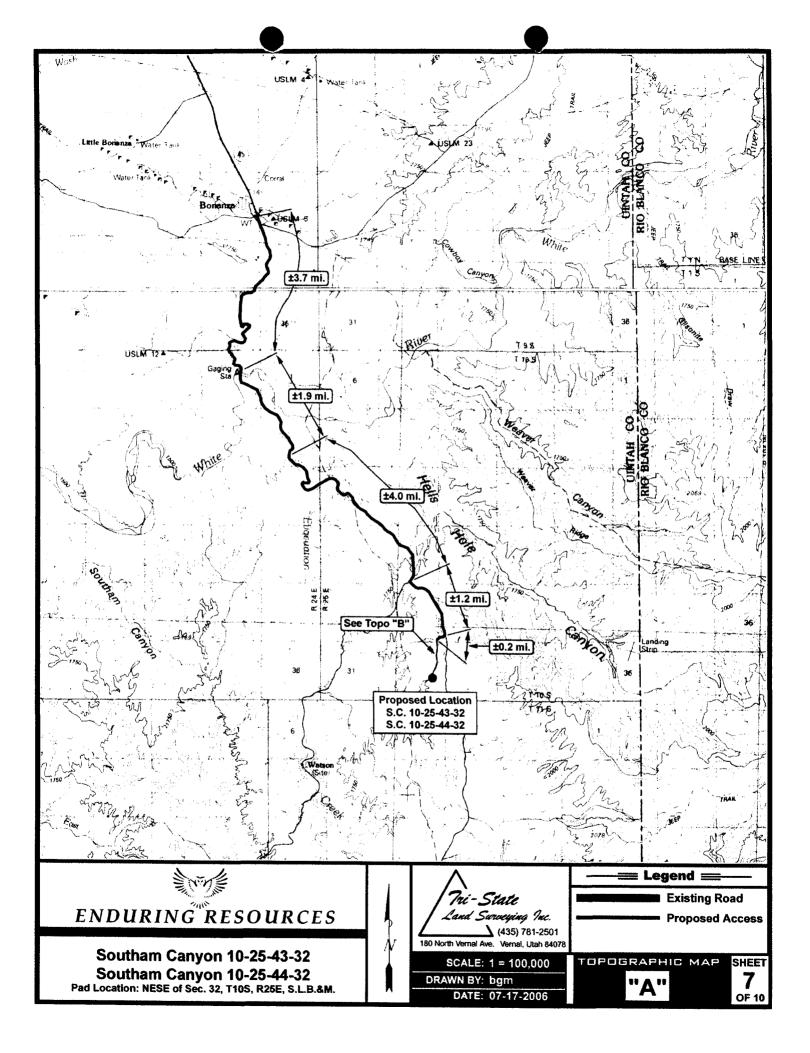
STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

DRN	

AMENDED REPORT □ (highlight changes)

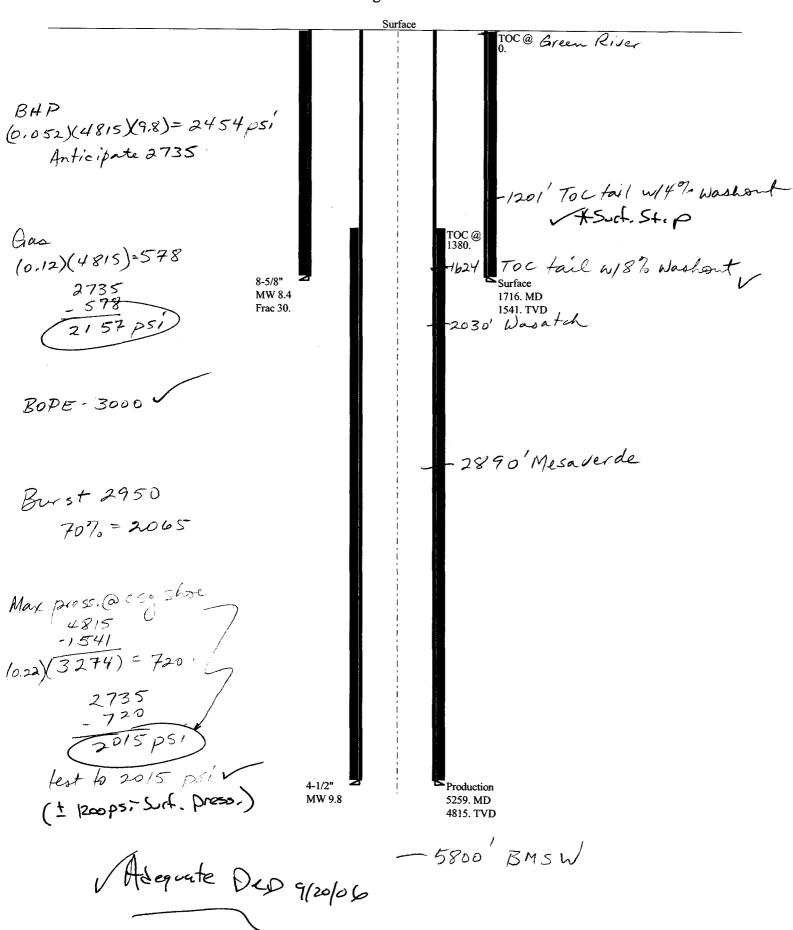
							5. MINERAL LEASE N	0: 6. SUR	FACE:
	A	PLICA	TION FOR	PERMIT TO	DRILL		ML-47065	State	
1A, TYPE OF WOF	rk: DRI	ILL 🔽	REENTER [	DEEPEN [			7. IF INDIAN, ALLOTT	EE OR TRIBE NA	AME:
B. TYPE OF WEL	l: OIL 🗌	gas 🗹	OTHER	SING	GLE ZONE	MULTIPLE ZONE	8. UNIT or CA AGREE	MENT NAME:	
2. NAME OF OPER							9. WELL NAME and N Southam Ca		5_44_32
3. ADDRESS OF C	esources, LL	<u>.C</u>			T	PHONE NUMBER:	10. FIELD AND POOL		J-44-02
475 17th St	., Ste 1500	CITY Den	ver <sub>STA</sub>	TE CO ZIP 802		(303) 350-5114	Undesignate		
4. LOCATION OF	WELL (FOOTAGES)	66097	0 × 441858	24 39.90	3932 -1	109-116966	11. QTR/QTR, SECTI MERIDIAN:	ON, TOWNSHIP,	RANGE,
AT SURFACE:	2123' FSL -	555' FEL	-	•			NESE 32	10S 25	5E
AT PROPOSED	PRODUCING ZONE	659' F اور ماما	SL - 662' FEL <u>44 x 4418</u>	SESE 1354 39.	899910	-109.11737	7	1 4-	
				OST OFFICE:				13. ST	UTAH
	heast of Bor						Uintah  17. NUMBER OF ACRES AS	SIGNED TO THIS	2 MELL.
	NEAREST PROPE	RTY OR LEAS	SE LINE (FEET)	16. NUMBER OF	ACRES IN LEASE	=: 640 :	17. NUMBER OF ACRES AS		40 acres
555'	) NEAREST WELL (I	DBILLING CC	MPI ETED OP	19. PROPOSED	DEPTH:	040	20. BOND DESCRIPTION:		+0 acres
APPLIED FOR	ON THIS LEASE (	FEET)	WIFLETED, OR	19. PROPOSED	DEF III.	4,815	RLB0008031		
1000' +	(SHOW WHETHER	DF. RT. GR. I	ETC.):	22. APPROXIMA	TE DATE WORK		23. ESTIMATED DURATION	:	
5820'	RT-KB		,-	10/1/200			20 days		
							<u> </u>		·····
24.			PROPOS	SED CASING AI	ND CEMENT	TING PROGRAM			
SIZE OF HOLE	CASING SIZE, G	RADE, AND W	VEIGHT PER FOOT	SETTING DEPTH		CEMENT TYPE, QUA	ANTITY, YIELD, AND SLURRY	WEIGHT	·
20"	14"	line pipe		40	3 yards		Ready Mix		
11"	8-5/8"	J-55	24#	1,716	Premium I	_ead	110 sxs	3.50	11.1
					Premium 7	Tail	183 sxs	1.15	15.8
7-7/8"	4-1/2"	N-80	11.6#	4,815	Class G		21 sxs	3.3	11.0
					50/50 Poz	Class G	581sxs	1.56	14.3
					<u> </u>				
25.				ATTA	CHMENTS				
VERIFY THE FOL	LOWING ARE ATT	ACHED IN AC	CORDANCE WITH THE	UTAH OIL AND GAS C	ONSERVATION G	SENERAL RULES:			
<b>✓</b> WELL PL	AT OR MAP PREPA	RED BY LICE	NSED SURVEYOR OR	ENGINEER	☑ con	MPLETE DRILLING PLAN			
<del></del>							RSON OR COMPANY OTHER	THAN THE LEA	SE OWNER
EVIDENC	SE OF DIVISION OF	WATER RIGH	ITS APPROVAL FOR U	SE OF WATER	L. FOF	RM 5, IF OPERATOR IS PE	RSON OR COMPANY OTHER	THAN THE CEAS	SE OWNER
NAME (PLEASE	PRINT) Alvin R	(AI) Arli	ian		TITLE	Landman - Re	egulatory Specialist		
SIGNATURE	<u> </u>	irli	ar z B		DATE	7/19/2006			
(This space for Str	ate use only)								
	, 1	ł					REC	にいんし	
API NUMBER AS	SSIGNED:L.	3-047	1-38481		APPROVAL			EIVED	,
				-			AUG 1	7 2006	

#### T10S, R25E, S.L.B.&M. ENDURING RESOURCES N8957W - 39.92 (G.L.O.)2635.71' (Measured) N89'58'W - 39.96 (G.L.O.) WELL LOCATION, TOP OF HOLE FOR THE N89°57'W G.L.O. (Basis of Bearings) S89°59'58"W - 2635.85' (Meas.) SOUTHAM CANYON 10-25-44-32, THE TOP OF HOLE LOCATED AS SHOWN IN Brass Cap Brass Cap Brass Cap THE NE 1/4 SE 1/4, THE BOTTOM HOLE (Meas. LOCATED AS SHOWN IN THE SE 1/4 SE (C.L.O.) 1/4 OF SECTION 32, T10S, R25E, S.L.B.&M. UINTAH COUNTY, UTAH. 2667. 3,, 90, 50,001 WELL LOCATION: SOUTHAM CANYON 10-25-44-32 ELEV. UNGRADED GROUND = 5804.8' 1975 Brass Cap Brass Cap 32 Top of NOTES: Hole 555' 1. The Bottom of hole bears S04°08'22"W 1468.37' from the Top of Hole. THIS IS TO CERTIFY THA PREPARED FROM FIELD 84 MADE BY ME OR UND 39. THE SAME ARE TRUK Drilling MY KNOWLEDGE AND HALIB No.18937 Window N00'16'E 20'15'28"E 662' **Bottom** of Hole 1975 Brass Cap Brass Cap Brass Cap S89°59'18"E - 2649.30' (Meas.) N89°55'53"E - 2636.63' (Meas.) TRI STATE LAND SURVEYING & CONSULTING S89'57'E - 40.13 (G.L.O.) N89\*59'E - 39.97 (G.L.O.) 180 NORTH VERNAL AVE. - VERNAL, UTAH 84078 (435) 781-2501SOUTHAM CANYON 10-25-44-32 DATE DRAWN: SURVEYED BY: J.H. SHEET SECTION CORNERS LOCATED (Surface Location) NAD 83 10-27-05 LATITUDE = 39.54.14.47" REVISED: 2b DRAWN BY: F.T.M. BASIS OF ELEV; U.S.G.S. 7-1/2 min LONGITUDE = 109° 07' 03.11" NOTES: **OF 10** QUAD (WEAVER RIDGE) SCALE: 1" = 1000'



## 8-06 Enduring Southam Cyn -25-44-32

**Casing Schematic** 



Well name:

08-06 Enduring Southam Cyn 10-25-44-32

Operator:

**Enduring Resources, LLC (N2750)** 

String type:

Surface

Project ID:

43-047-38481

Location:

**Uintah County** 

Design parameters:	Minim
Collapse	Collap

Mud weight:

8.400 ppg

Design is based on evacuated pipe.

num design factors:

Collapse:

Design factor

1.125

**Environment:** 

H2S considered? Surface temperature:

75 °F Bottom hole temperature: 97 °F Temperature gradient: 1.40 °F/100ft

Minimum section length: 1,500 ft

**Burst:** 

Design factor

1.00

1.80 (J)

1.80 (J)

1.60 (J)

1.50 (J)

1.50 (B)

Cement top:

Surface

38.41°

No

**Burst** 

Max anticipated surface

pressure: Internal gradient: 1,874 psi

Calculated BHP

No backup mud specified.

0.120 psi/ft **Tension:** 

2,059 psi

8 Round STC:

8 Round LTC: **Buttress:** Premium:

Body yield:

Tension is based on buoyed weight. Neutral point: 1,468 ft

Directional well information:

Kick-off point 400 ft Departure at shoe: 588 ft Maximum dogleg: 5 °/100ft

Inclination at shoe: Re subsequent strings:

Next setting depth: 4,815 ft Next mud weight: 9.800 ppg Next setting BHP: 2,451 psi Fracture mud wt: 30.000 ppg Fracture depth: 1,541 ft Injection pressure 2,402 psi

Run Segment Nominal True Vert End Measured Drift internal Seq Length Size Weight Grade **Finish** Depth Depth **Diameter** Capacity (ft) (in) (lbs/ft) (ft) (ft) (in) (ft³) 1 1716 8.625 24.00 J-55 ST&C 1541 1716 7.972 82.6 Run Collapse Collapse Collapse Burst **Burst Burst Tension Tension Tension** Seq Load Strength Design Load Strength Design Load Strength Design (psi) (psi) **Factor** (psi) (psi) **Factor** (Kips) (Kips) **Factor** 1 673 1370 2.037 2059 2950 1.43 32 244 7.55 J

Prepared

Helen Sadik-Macdonald Utah Div. of Oil & Mining

Phone: 801-538-5357 FAX: 801-359-3940

Date: September 5,2006 Salt Lake City, Utah

Collapse is based on a vertical depth of 1541 ft, a mud weight of 8.4 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

Well name:

08-06 Enduring Southam Cyn 10-25-44-32

Operator:

**Enduring Resources, LLC (N2750)** 

String type:

Production

Project ID:

43-047-38481

Location:

**Uintah County** 

Minimum design factors:

**Environment:** 

Collapse

Mud weight: Design is based on evacuated pipe.

Design parameters:

Collapse: 9.800 ppg Design factor

1.125

H2S considered?

Surface temperature:

No 75 °F

Bottom hole temperature: Temperature gradient:

142 °F 1.40 °F/100ft

Minimum section length: 1,500 ft

**Burst:** 

Design factor

1.00 Cement top: 1.380 ft

**Burst** 

Max anticipated surface

pressure: Internal gradient: Calculated BHP

1,874 psi

0.120 psi/ft 2,451 psi

**Tension:** 

**Buttress:** 

8 Round STC: . 1.80 (J) 8 Round LTC:

1.80 (J) 1.60 (J)

Departure at shoe: Maximum dogleg:

Kick-off point

400 ft 1468 ft 5 °/100ft

1.50 (J) Premium: Body yield:

1.50 (B)

Inclination at shoe:

Directional well information:

0 °

No backup mud specified.

Tension is based on buoyed weight. Neutral point: 4,554 ft

Run Seq	Segment Length (ft)	Size (in)	Nominal Weight (lbs/ft)	Grade	End Finish	True Vert Depth (ft)	Measured Depth (ft)	Drift Diameter (in)	Internal Capacity (ft³)
1	5259	4.5	11.60	N-80	LT&C	4815	5259	3.875	121.9
Run Seq	Collapse Load (psi) 2451	Collapse Strength (psi) 6350	Collapse Design Factor 2.590	Burst Load (psi) 2451	Burst Strength (psi) 7780	Burst Design Factor 3.17	Tension Load (Kips) 48	Tension Strength (Kips) 223	Tension Design Factor 4.68 J

Prepared

Helen Sadik-Macdonald Utah Div. of Oil & Mining Phone: 801-538-5357 FAX: 801-359-3940

Date: September 5,2006 Salt Lake City, Utah

Collapse is based on a vertical depth of 4815 ft, a mud weight of 9.8 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

43.047-384 83

From: To: Robert Clark Whitney, Diana

Date:

8/28/2006 2:49:59 PM

Subject:

RDCC short turn around responses

The following comments are provided in response to short turn around items RDCC #6950 through RDCC #6952, and RDCC #6988 through RDCC # 6990.

RDCC #6950, Comments begin: The Houston Exploration Company's proposal to drill the Squaw Ridge 14-16-7-25 wildcat well, in Uintah County, may require a permit, known as an Approval Order, from the Executive Secretary of the Air Quality Board. If any compressor or pump stations are constructed at the site, a permit application, known as a Notice of Intent (NOI), should be submitted to the Executive Secretary at the Utah Division of Air Quality at 150 N. 1950 West, Salt Lake City, Utah, 84116 for review according to the Utah Air Quality Rule R307-401. Permit: Notice of Intent and Approval Order. A copy of the rules is found at www.rules.utah.gov/publicat/code/r307/r307.htm. The proposed project, in Uintah County, is also subject to Utah Air Quality Rule R307-205-5, Fugitive Dust, due to the fugitive dust that is generated during the excavating phases of the project. These rules apply to construction activities that disturb an area greater than 1/4 acre in size. A permit, known as an Approval Order, is not required from the Executive Secretary of the Air Quality Board, but steps need to be taken to minimize fugitive dust. such as watering and/or chemical stabilization, providing vegetative or synthetic cover or windbreaks. A copy of the rules may be found at www.rules.utah.gov/publicat/code/r307/r307.htm . Comments end. RDCC # 6951, Comments begin: The Enduring Resources, LLC proposal to drill the Southam Canyon 10-25-44-32 wildcat well, in Uintah County, may require a permit, known as an Approval Order, from the Executive Secretary of the Air Quality Board. If any compressor or pump stations are constructed at the site, a permit application, known as a Notice of Intent (NOI), should be submitted to the Executive Secretary at the Utah Division of Air Quality at 150 N. 1950 West, Salt Lake City, Utah, 84116 for review according to the Utah Air Quality Rule R307-401. Permit: Notice of Intent and Approval Order. A copy of the rules is found at www.rules.utah.gov/publicat/code/r307/r307.htm. The proposed project, in Uintah County, is also subject to Utah Air Quality Rule R307-205-5, Fugitive Dust, due to the fugitive dust that is generated during the excavating phases of the project. These rules apply to construction activities that disturb an area greater than 1/4 acre in size. A permit, known as an Approval Order, is not required from the Executive Secretary of the Air Quality Board, but steps need to be taken to minimize fugitive dust. such as watering and/or chemical stabilization, providing vegetative or synthetic cover or windbreaks. A copy of the rules may be found at www.rules.utah.gov/publicat/code/r307/r307.htm . Comments End. RDCC #6952, Comments begin: The Enduring Resources, LLC proposal to drill the Buck Camp 12-22-14-2 wildcat well, in Uintah County, may require a permit, known as an Approval Order, from the Executive Secretary of the Air Quality Board. If any compressor or pump stations are constructed at the site, a permit application, known as a Notice of Intent (NOI), should be submitted to the Executive Secretary at the Utah Division of Air Quality at 150 N. 1950 West, Salt Lake City, Utah, 84116 for review according to the Utah Air Quality Rule R307-401. Permit: Notice of Intent and Approval Order. A copy of the rules is found at www.rules.utah.gov/publicat/code/r307/r307.htm . The proposed project, in Uintah County, is also subject to Utah Air Quality Rule R307-205-5, Fugitive Dust, due to the fugitive dust that is generated during the excavating phases of the project. These rules apply to construction activities that disturb an area greater than 1/4 acre in size. A permit, known as an Approval Order, is not required from the Executive Secretary of the Air Quality Board, but steps need to be taken to minimize fugitive dust, such as watering and/or chemical stabilization, providing vegetative or synthetic cover or windbreaks. A copy of the rules may be found at www.rules.utah.gov/publicat/code/r307/r307.htm . Comments end. RDCC #6988, Comments begin: The Houston Exploration Company's proposal to drill the Gusher 13-11-5-19 wildcat well, in Uintah County, may require a permit, known as an Approval Order, from the Executive Secretary of the Air Quality Board. If any compressor or pump stations are constructed at the site, a permit application, known as a Notice of Intent (NOI), should be submitted to the Executive Secretary at the Utah Division of Air Quality at 150 N. 1950 West, Salt Lake City, Utah, 84116 for review according to the Utah Air Quality Rule R307-401. Permit: Notice of Intent and Approval Order. A copy of the rules is found at www.rules.utah.gov/publicat/code/r307/r307.htm. The proposed project, in Uintah County, is also subject to Utah Air Quality Rule R307-205-5, Fugitive Dust, due to the fugitive dust that is generated during the excavating phases of the project. These rules apply to construction activities that disturb an

area greater than 1/4 acre in size. A permit, known as an Approval Order, is not required from the Executive Secretary of the Air Quality Board, but steps need to be taken to minimize fugitive dust, such as watering and/or chemical stabilization, providing vegetative or synthetic cover or windbreaks. A copy of the rules may be found at www.rules.utah.gov/publicat/code/r307/r307.htm . Comments end. RDCC # 6989, Comments begin: The Enduring Resources, LLC proposal to drill the Buck Camp 12-22-23-2 wildcat well, in Uintah County, may require a permit, known as an Approval Order, from the Executive Secretary of the Air Quality Board. If any compressor or pump stations are constructed at the site, a permit application, known as a Notice of Intent (NOI), should be submitted to the Executive Secretary at the Utah Division of Air Quality at 150 N. 1950 West, Salt Lake City, Utah, 84116 for review according to the Utah Air Quality Rule R307-401. Permit: Notice of Intent and Approval Order. A copy of the rules is found at www.rules.utah.gov/publicat/code/r307/r307.htm. The proposed project, in Uintah County, is also subject to Utah Air Quality Rule R307-205-5, Fugitive Dust, due to the fugitive dust that is generated during the excavating phases of the project. These rules apply to construction activities that disturb an area greater than 1/4 acre in size. A permit, known as an Approval Order, is not required from the Executive Secretary of the Air Quality Board, but steps need to be taken to minimize fugitive dust, such as watering and/or chemical stabilization, providing vegetative or synthetic cover or windbreaks. A copy of the rules may be found at www.rules.utah.gov/publicat/code/r307/r307.htm Comments end. RDCC # 6990, Comments begin: The RBDR,LLC proposal to drill the Crazy "R" Ranch #1 wildcat well, in Sevier County, may require a permit, known as an Approval Order, from the Executive Secretary of the Air Quality Board. If any compressor or pump stations are constructed at the site, a permit application, known as a Notice of Intent (NOI), should be submitted to the Executive Secretary at the Utah Division of Air Quality at 150 N. 1950 West, Salt Lake City, Utah, 84116 for review according to the Utah Air Quality Rule R307-401. Permit: Notice of Intent and Approval Order. A copy of the rules is found at www.rules.utah.gov/publicat/code/r307/r307.htm . The proposed project, in Uintah County, is also subject to Utah Air Quality Rule R307-205-5, Fugitive Dust, due to the fugitive dust that is generated during the excavating phases of the project. These rules apply to construction activities that disturb an area greater than 1/4 acre in size. A permit, known as an Approval Order, is not required from the Executive Secretary of the Air Quality Board, but steps need to be taken to minimize fugitive dust, such as watering and/or chemical stabilization, providing vegetative or synthetic cover or windbreaks. A copy of the rules may be found at www.rules.utah.gov/publicat/code/r307/r307.htm Comments end. Robert ClarkDivision of Air Quality536-4435

CC: Mcneill, Dave; Wright, Carolyn

#### **MEMORANDUM**

DATE:

August 29, 2006

TO:

Utah Division of Oil, Gas and Mining, and Resource Development

Coordinating Committee

FROM:

Utah Geological Survey, Ground Water and Paleontology Program

SUBJECT:

UGS comments on RDCC items 6950, 6951, 6952, 6958, 6959, 6989.

6996, 6997, 6998, and 6999

6950. Trust Lands Administration, State Lease # ML-47954-A Sec. 16, T7S, R25E, Uintah County

There are a number paleontological localities recorded in our files in this project area and it is mapped as T3 (Eocene Uinta and Duchesne River Formations) on the Utah State Geological Map. The Uinta and Duchesne River Formations are among the most paleontological sensitive rock units in Utah and have a strong potential for yielding significant vertebrate fossil localities. The office of the State paleontologist therefore recommends that a paleontological survey be conducted for this project and its easements by a paleontologist with a valid state permit.

6951. Trust Lands Administration, State Lease # ML-47965 Sec. 32, T10S, R25E, Uintah County

Although there are no paleontological localities recorded in our files in this project area, it is mapped as T3 (Eocene Uinta and Duchesne River Formations) on the Utah State Geological Map. The Uinta and Duchesne River Formations are among the most paleontological sensitive rock units in Utah and have a strong potential for yielding significant vertebrate fossil localities. The office of the State paleontologist therefore recommends that a paleontological survey be conducted for this project and its easements by a paleontologist with a valid state permit.

6952. Trust Lands Administration, State Lease # ML-47987 Sec. 2, T12S, R22E, Uintah County

Although there are no paleontological localities recorded in our files in this project area, it is mapped as T3 (Eocene Uinta and Duchesne River Formations) on the Utah State Geological Map. The Uinta and Duchesne River Formations are among the most paleontological sensitive rock units in Utah and have a strong potential for yielding significant vertebrate fossil localities. The office of the State paleontologist therefore recommends that a paleontological survey be conducted for this project and its easements by a paleontologist with a valid state permit.

6958. Trust Lands Administration, Seismic and Vibro Surveys, Sec. 2 &36, T21S, R18E; Sec. 16, 33, 34, &35, T21S, R19E; Sec. 2, T22S, R18E; and Sec. 2, 3, 4, 9, 10, 11, 14, 15, 16, 21, 22, 23, & 24, T21S, R18E; Uintah County

Although there are no paleontological localities recorded in our files in this project area, it is mapped as T3 (Eocene Uinta and Duchesne River Formations) on the Utah State Geological Map. The Uinta and Duchesne River Formations are among the most paleontological sensitive rock units in Utah and have a strong potential for yielding significant vertebrate fossil localities. The office of the State paleontologist therefore recommends that a paleontological survey be conducted for this project and its easements by a paleontologist with a valid state permit.

6959. Trust Lands Administration, SULA #1470, Sec. 36, T29S, R20E; Sec. 36, T29.5S, R20E; and Sec. 32, T30S, R20E; San Juan County

Although there are no paleontological localities recorded in our files in this project area, significant vertebrate fossil localities have been reported nearby in the Permian strata. The office of the State paleontologist therefore recommends that a paleontological survey be conducted for this project and its easements by a paleontologist with a valid state permit by a paleontologist with a valid state permit.

6989. Trust Lands Administration, State Lease # ML-47087 Sec. 2, T12S, R22E, Uintah County

Although there are no paleontological localities recorded in our files in this project area, it is mapped as T3 (Eocene Uinta and Duchesne River Formations) on the Utah State Geological Map. The Uinta and Duchesne River Formations are among the most paleontological sensitive rock units in Utah and have a strong potential for yielding significant vertebrate fossil localities. The office of the State paleontologist therefore recommends that a paleontological survey be conducted for this project and its easements by a paleontologist with a valid state permit.

6996. Division of Oil, Gas and Mining, Short Turn Around, Application for Permit to Drill - proposal to drill a wildcat well the Knight 14-30 on a Fee lease Sec. 30, T3S, R2E, Uintah County

Although there are no paleontological localities recorded in our files in this project area, it is mapped as T3 (Eocene Uinta and Duchesne River Formations) on the Utah State Geological Map. The Uinta and Duchesne River Formations are among the most paleontological sensitive rock units in Utah and have a strong potential for yielding significant vertebrate fossil localities. The office of the State paleontologist therefore recommends that a paleontological survey be conducted for this project and its easements by a paleontologist with a valid state permit.

6997. Division of Oil, Gas and Mining, Short Turn Around, Application for Permit to

Drill - proposal to drill the Deep Creek 2-30 on a Fee lease, Sec. 30, T3S, R2E, Uintah County

Although there are no paleontological localities recorded in our files in this project area, it is mapped as T3 (Eocene Uinta and Duchesne River Formations) on the Utah State Geological Map. The Uinta and Duchesne River Formations are among the most paleontological sensitive rock units in Utah and have a strong potential for yielding significant vertebrate fossil localities. The office of the State paleontologist therefore recommends that a paleontological survey be conducted for this project and its easements by a paleontologist with a valid state permit.

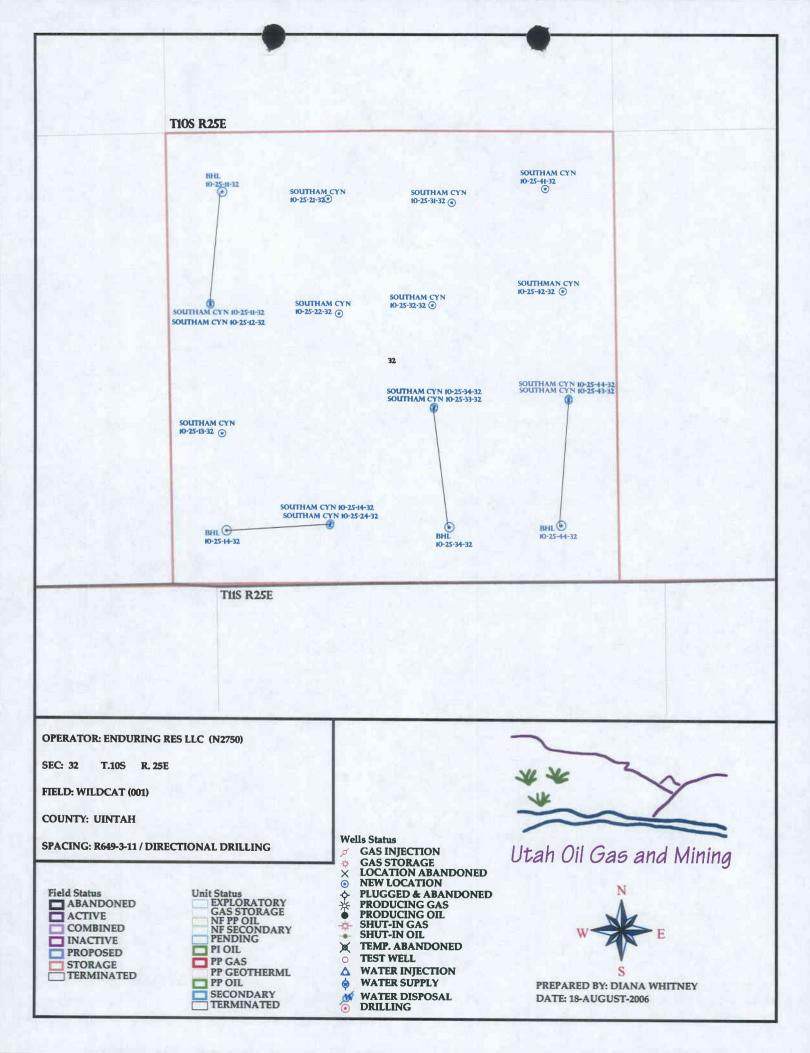
6998. Division of Oil, Gas and Mining, Short Turn Around, Application for Permit to Drill - proposal to drill a wildcat well the Knight 16-30 on a Fee lease, Sec. 30, T3S, R2E, Uintah County

Although there are no paleontological localities recorded in our files in this project area, it is mapped as T3 (Eocene Uinta and Duchesne River Formations) on the Utah State Geological Map. The Uinta and Duchesne River Formations are among the most paleontological sensitive rock units in Utah and have a strong potential for yielding significant vertebrate fossil localities. The office of the State paleontologist therefore recommends that a paleontological survey be conducted for this project and its easements by a paleontologist with a valid state permit.

6999. Division of Oil, Gas and Mining, Short Turn Around, Application for Permit to Drill - proposal to drill a wildcat well the Eliason 6-30 on a Fee lease, Sec. 30, T3S, R2E, Uintah County

Although there are no paleontological localities recorded in our files in this project area, it is mapped as T3 (Eocene Uinta and Duchesne River Formations) on the Utah State Geological Map. The Uinta and Duchesne River Formations are among the most paleontological sensitive rock units in Utah and have a strong potential for yielding significant vertebrate fossil localities. The office of the State paleontologist therefore recommends that a paleontological survey be conducted for this project and its easements by a paleontologist with a valid state permit.

43-047-38481
350-5114
/ /
tials Date
LD 9/20/96
1/9/36
MVRD
L? NO
& 920' Between Wells



## DIVISION OF OIL, GAS AND MINING APPLICATION FOR PERMIT TO DRILL STATEMENT OF BASIS

WELL NAME & NUMBER: SO	UTHAM CANYON 10-25-44-32
API NUMBER: 43-	
	P: <u>10S</u> RNG: <u>25E</u> <u>2123'</u> FSL <u>555'</u> FEL
Geology/Ground Water:	
saline water at this location is estimated to of Division of Water Rights records show 32. The surface formation at this site is to is made up of lenticular sandstones interfaquifer. The Green river Formation shows	e casing at this location. The depth to the base of the moderately to be at a depth of 5,800'which is below the proposed T.D. A search was no water wells within a 10,000 foot radius of the center of Section the Uinta-Green River Formation transition. The Uinta Formation bedded with shales and is expected to have limited value as an auld be found near the surface. The Green River Formation may be adequately protected by the proposed casing and cementing  Date: 08-28-06
Surface:	
minerals. Due to harsh weather, Jim Davi take place in his absence. Doug Hammon closely match the surroundings. Ben Wi	•
Conditions of Approval/Application fo	

#### **Conditions of Approval/Application for Permit to Drill:**

1. A synthetic liner with a minimum thickness of 12 mils shall be properly installed and maintained in the reserve pit.

## ON-SITE PREDRILL EVALUATION Division of Oil, Gas and Mining

**OPERATOR:** ENDURING RESOURCES, LLC

WELL NAME & NUMBER: SOUTHAM CANYON 10-25-44-32

**API NUMBER:** 43-047-38481

LEASE: ML-47065 FIELD/UNIT: UNDESIGNATED

LOCATION: 1/4,1/4 NESE Sec: 32 TWP: 108 RNG: 25E 2123' FSL 555' FEL LEGAL WELL SITING: 460 F SEC. LINE; 460 F 1/4,1/4 LINE; 920 F ANOTHER WELL.

GPS COORD (UTM): 4418594Y 0660980X SURFACE OWNER: SITLA.

#### **PARTICIPANTS**

Richard Powell (DOGM), Doug Hammond (Enduring Resources), Larry Rowell (Ponderosa Oilfield Service), Chris Stewart & Dustin Laub (TriState Land Surveying).

#### REGIONAL/LOCAL SETTING & TOPOGRAPHY

Area of location slopes gently south inside a small valley with hills directly to the east and west of proposed location. A small wash hugs the west side of the valley. Hills and ridges dominate the terrain of this section, with rock formations protruding from the tops of many of the slopes. The slopes of the western half of this section are much more gradual. The ridges generally seem to run from north to south. Drainage is westward to Evacuation Creek. To the east of this section, are much taller and steeper slopes. Bonanza, UT is approximately 11 miles to the north.

#### SURFACE USE PLAN

CURRENT SURFACE USE: Wildlife & Livestock grazing.

PROPOSED SURFACE DISTURBANCE: Location will be 375' by 250'. Proposed new access road to be approximately 3430'. The last 1900' of the new access will be for this well only, several other wells are proposed to be accessed from the first 1530' feet.

LOCATION OF EXISTING WELLS WITHIN A 1-MILE RADIUS: See attached map from GIS database.

LOCATION OF PRODUCTION FACILITIES AND PIPELINES: All production facilities will be on location and added after drilling well. Pipeline to follow access road.

SOURCE OF CONSTRUCTION MATERIAL: Al construction material will be borrowed from site during construction of location.

ANCILLARY FACILITIES: None will be required.

WILL DRILLING AT THIS LOCATION GENERATE PUBLIC INTEREST OF CONCERNS? (EXPLAIN): Unlikely.

#### WASTE MANAGEMENT PLAN:

Drilled cuttings will be settled into reserve pit. Liquids from pit will be allowed to evaporate. Formation water will be confined to storage tanks. Portable toilets, sewage holding tanks, and onsite sewage treatment equipment will be handled by commercial contractors and regulated by the appropriate health authority. Trash will be contained in trash baskets and disposed of at an approved landfill.

#### ENVIRONMENTAL PARAMETERS

AFFECTED FLOODPLAINS AND/OR WETLANDS: none

FLORA/FAUNA: <u>Sagebrush</u>, <u>Greasewood</u>, <u>spiny hopsage</u>, <u>shadscale / Deer</u>, <u>elk</u>, <u>Rodents</u>, <u>Coyote</u>, <u>Songbirds</u>, <u>Rabbit</u>, <u>Bobcat</u>, <u>Pronghorn</u>, <u>Cougar</u>.

SOIL TYPE AND CHARACTERISTICS: <u>Light brown silty clay with scattered</u> rock and shale.

EROSION/SEDIMENTATION/STABILITY: <u>Very little natural erosion.</u>
Sedimentation and stability are not a problem and location construction shouldn't cause an increase in stability or erosion problems.

PALEONTOLOGICAL POTENTIAL: Paleontology study by IPC on 3/1/06.

#### RESERVE PIT

CHARACTERISTICS: 215' BY 75' and twelve feet deep.

LINER REQUIREMENTS (Site Ranking Form attached): A liner will be required for reserve pit. Site ranking score is 25.

#### SURFACE RESTORATION/RECLAMATION PLAN

As per SITLA.

SURFACE AGREEMENT: As per SITLA.

CULTURAL RESOURCES/ARCHAEOLOGY: Archaeology study done by MOAC 2/23/06.

#### OTHER OBSERVATIONS/COMMENTS

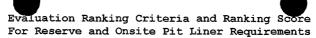
This directional well shares a pad with the Southam Canyon 10-25-43-32.

#### ATTACHMENTS

Photos of this site were taken and placed on file.

RICHARD POWELL
DOGM REPRESENTATIVE

03/07/06 10:35 AM DATE/TIME



Site-Specific Factors	Ranking	Site Ranking
Distance to Groundwater (feet) >200 100 to 200 75 to 100 25 to 75 <25 or recharge area	0 5 10 15 20	0
Distance to Surf. Water (feet) >1000 300 to 1000 200 to 300 100 to 200 < 100	0 2 10 15 20	0
Distance to Nearest Municipal Well (feet)	0 5 10 20	0
Distance to Other Wells (feet) >1320 300 to 1320 <300	0 10 20	0
Native Soil Type Low permeability Mod. permeability High permeability	0 10 20	_20
Fluid Type Air/mist Fresh Water TDS >5000 and <10000 TDS >10000 or Oil Base Mud Fluid containing significant levels of hazardous constituents	0 5 10 15	
Drill Cuttings Normal Rock Salt or detrimental	0 10	0
Annual Precipitation (inches) <10 10 to 20 >20	0 5 10	0
Affected Populations <10 10 to 30 30 to 50 >50	0 6 8 10	0
Presence of Nearby Utility Conduits Not Present Unknown Present	0 10 15	0

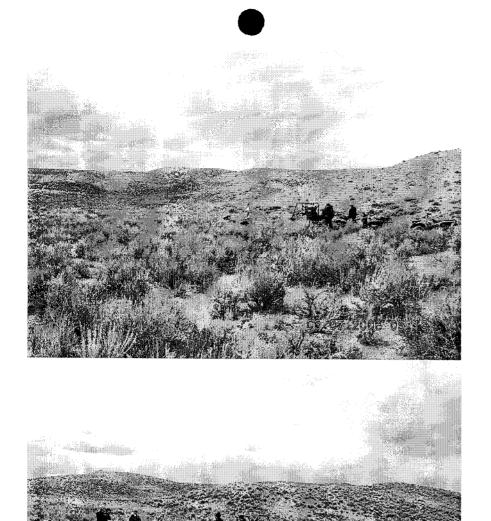
\_\_\_\_\_\_\_ (Level <u>I Sensitivity</u>)

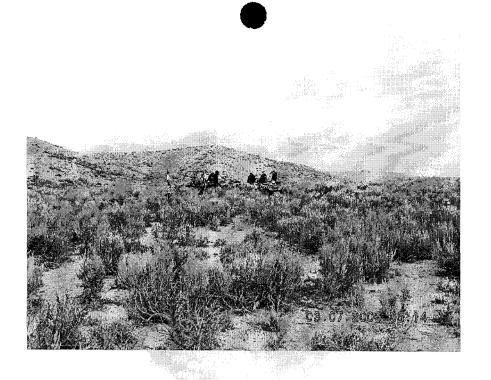
Sensitivity Level I = 20 or more; total containment is required.

Sensitivity Level II = 15-19; lining is discretionary.

Sensitivity Level III = below 15; no specific lining is required.

Final Score







#### STATE ACTIONS

### Resource Development Coordinating Committee Governor's Office of Planning and Budget

## 5110 State Office Building

SLC, UT 84114

Phone No.	o. 537-9230
1. State Agency	2. Approximate date project will start:
Oil, Gas and Mining	
1594 West North Temple, Suite 1210	Upon Approval or September 1, 2006
Salt Lake City, UT 84114-5801	
3. Title of proposed action:	
Application for Permit to Drill	
4. Description of Project:	
Enduring Resources, LLC proposes to drill the	he Southam Canyon 10-25-44-32 well (wildcat) on
State lease ML-47065, Uintah County, Utah. Th	his action is being presented to the RDCC for
consideration of resource issues affecting state in	nterests. The Division of Oil, Gas and Mining is the
primary administrative agency in this action and	must issue approval before operations commence.
5. Location and detailed map of land affected (sit	e location map required, electronic GIS map
preferred)	
(include UTM coordinates where possible) (indic	
2123' FSL 555' FEL, NE	
Section 32, Township 10 South, R	Range 25 East, Uintah County, Utah
6. Possible significant impacts likely to occur:	
Surface impacts include up to five acres of su	urface disturbance during the drilling and completion
phase (estimated for five weeks duration). If oil	and gas in commercial quantities is discovered, the
location will be reclaimed back to a net disturban	nce of between one and two acres - not including
road, pipeline, or utility infrastructure. If no oil	or gas is discovered, the location will be completely
reclaimed.	
7. Identify local government affected	
a. Has the government been contacted? No.	
b. When?	
c. What was the response?	
d. If no response, how is the local government	t(s) likely to be impacted?
8. For acquisitions of land or interests in land by	DWR or State Parks please identify state
representative and state senator for the project a	rea. Name and phone number of state
representative, state senator near project site, if a	applicable:
a. Has the representative and senator been con	ntacted? N/A
9. Areawide clearinghouse(s) receiving state action	
Uintah Basin Association of Government	nts
10. For further information, contact:	11. Signature and title of authorized officer

**Diana Whitney** (801) 538-5312 **Date:** 

Phone:

Gil Hunt, Associate Director

**Date:** August 18, 2006

475 17<sup>th</sup> Street, Suite 1500 Denver, CO 80202 (303) 573-1222 (303) 573-0461

## **Enduring Resources**



To:	Helen Sadik-Macdo	onald	From:	Evette Biss	sett
Fax:	801-359-3940		Pages:	7	
Phone	):		Date:	8/30/2006	
Re:	Southam Canyon 1	0-25-44-32	ec:	·	
□ Ur	gent	X For R	eview		☐ Please Comment
□ Pl	ease Reply	☐ Pleas	e Recycle	€	
• Co	mments	·			

Corrected cover page and drilling plan

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DIV. OF OIL, GAS & MINING

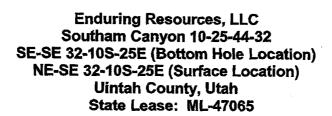
## STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS AND MINING

			DI\	/ISION OF O	IL, GAS AN	ND MINING				D REPORT
	А	PPLICATI	ON FOR	PERMIT TO	D DRILL			5, MINERAL LEA ML-4706		6. SURFACE: State
1A. TYPE OF W	1A. TYPE OF WORK: DRILL A REENTER DEEPEN								LOTTEE OR '	RIBE NAME:
B. TYPE OF W		GAS 🗹 O	THER	SIN	IGLE ZONE [	MULTIPLE ZON	IE 🗾	8. UNIT or CA AG	REEMENT N	IAME:
2. NAME OF OP Enduring F	ERATOR: Resources, Ll	C		<u> </u>				9. WELL NAME a		
3. ADDRESS OF	OPERATOR:					PHONE NUMBER:		Southam 10. FIELD AND P		10-25-44-32
	t., Ste 1500	cmy Denver	STA	TE CO ZIP 80	220	(303) 350-5114		Undesigna		LDOM:
	F WELL (FOOTAGES	•						11. QTR/QTR, SE MERIDIAN:	ECTION, TOV	/NSHIP, RANGE,
	2123' FSL - PRODUCING ZONE		- 662' FEL S	SESE				NESE 3	108	25E
14. DISTANCE I	N MILES AND DIREC	TION FROM NEARE	ST TOWN OR PO	ST OFFICE:				12. COUNTY:		
	theast of Bor		-				ľ	Uintah		13. STATE: UTAH
	O NEAREST PROPE		E (FEET)	16. NUMBER O	FACRES IN LEA	SE:	17. NI	IMBER OF ACRES	ASSIGNED	TO THIS WELL:
555'						640				40 acres
18. DISTANCE T	O NEAREST WELL (I R) ON THIS LEASE (F	ORILLING, COMPLE	TED, OR	19. PROPOSED	DEPTH:		20. BC	ND DESCRIPTION	N:	
1000' +						5,259	RL	B0008031		
	21. ELEVATIONS (SHOW WHETHER DF, RT, GR, ETC.): 22. APPROXIMATE DATE WORK WILL START: 23. E				23. ES	TIMATED DURATI	ION:	<del></del>		
5820	5820' RT-KB 10/1/2006 20					20	days			
24.	<b>.</b>			ED CASING A	ND CEMEN	TING PROGRAM				
SIZE OF HOLE		ADE, AND WEIGHT	PER FOOT	SETTING DEPTH		CEMENT TYPE, QUA	י, אדודאגי	YIELD, AND SLURI	RY WEIGHT	
20"	14"	line pipe		40	3 yards		Read	y Mbx		
11"	8-5/8"	J-55	24#	1,716	Premium	Lead	110	O sxs	3.50	11.1
					Premium	Tail	183	3 sxs	1.15	15.8
7-7/8"	4-1/2"	N-80	11.6#	5,259	Class G		2	1 sxs	3.3	11.0
					50/50 Poz	Class G	66	2sxs	1.56	14.3
										, <u></u>
				_				<del></del> -		
25.	•		· ·	ATTA	CHMENTS					
VERIFY THE FOL	LOWING ARE ATTAC	HED IN ACCORDA	NCE WITH THE U	TAH OIL AND GAS CO	ONSERVATION G	ENERAL RULES:		<del></del>		
WELL PL	AT OR MAP PREPAR				1 🖘					
						MPLETE DRILLING PLAN				
	E OF DIVISION OF W	ATER RIGHTS APP	PROVAL FOR USE	OF WATER	FOF	RM 5, IF OPERATOR IS PER	RSON OF	R COMPANY OTHE	ER THAN THE	LEASE OWNER
MANE /DLEAGE	<sub>PRINT)</sub> Alvin R.	(AI) Arlian				Landman Da				
	an	Colem	<del>ي</del>		TITLE	Landman - Reg	Julato	ry Specialis	ST	
SIGNATURE			<u> </u>		DATE	7/19/2006		<del></del>		
(This space for Stat	e use only)									
API NUMBER ASS	igned:				APPROVAL:			•		1

(11/2001)

(See Instructions on Reverse Side

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#### ONSHORE ORDER 1 - DRILLING PLAN

#### 1. <u>Estimated Tops of Geological Markers:</u>

Formation	Depth (K.B.)
Uinta	Surface
Green River	Surface
Wasatch	2080
Mesaverde	2890

#### 2. Estimated Depths of Anticipated Water, Oil, Gas or Other Minerals:

Substance	Formation	Depth (K.B.)
	KB-Uinta Elevation: 5820	
Oil / Gas	Green River	Surface
Oil /Gas	Wasatch	2039
Oil /Gas	Mesaverde	2890
	Estimated TD	5259

An 11" hole will be drilled to only approximately 1,716 feet because it is a directional well. The depth will be determined by the depth that the Birds Nest zone is encountered. The hole will be drilled 400 feet beyond the top of the Birds Nest zone and surface casing will be set.

### 3. Pressure Control Equipment: (3000 psi schematic attached)

- A. Type: Eleven (11) inch double gate hydraulic BOP with eleven (11) inch annular preventer on 3,000 psi casinghead, with 3,000 psi choke manifold equipped per the attached diagram. BOPE as specified in *Onshore Oil & Gas Order Number 2*. A PVT, stroke counter and flow sensor will be installed to check for flow and monitor pit volume.
- B. Pressure Rating: 3,000 psi BOPE
- C. Kelly will be equipped with upper and lower Kelly valves.
- D. Testing Procedure: <u>Annular Preventer</u>

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### Enduring Resources, LLC Southam Canyon 10-25-44-32

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At a minimum, the annular preventer will be pressure tested to 50% of the stack rated working pressure for a period of ten (10) minutes or until provisions of the test are met, whichever is longer.

At a minimum, the above pressure test will be performed:

- 1. When the annular preventer is initially installed;
- 2. Whenever any seal subject to test pressure is broken;
- 3. Following related repairs; and
- 4. At thirty (30) day intervals.

In addition to the above, the annular preventer will be functionally operated at least weekly.

#### **Blow-Out Preventer**

At a minimum, the BOP, choke manifold, and related equipment will be pressure tested to the approved working pressure of the BOP stack (if isolated from the surface casing by a test plug) or to 70% of the internal yield strength of the surface casing (if the BOP is not isolated from the casing by a test plug). Pressure will be maintained for a period of at least ten (10) minutes or until the requirements of the test are met, whichever is longer.

At a minimum, the above pressure test will be performed:

- 1. When the BOP is initially installed;
- 2. Whenever any seal subject to test pressure is broken;
- 3. Following related repairs; and
- 4. At thirty (30) day intervals.

In addition to the above, the pipe and blind rams will be activated each trip, but not more than once each day. All BOP drills and tests will be recorded in the IADC driller's log.

#### E. Miscellaneous Information:

The blowout preventer and related pressure control equipment will be installed, tested and maintained in compliance with the specifications in and requirements of Onshore Oil & Gas Order Number 2.

## 4. <u>Proposed Casing & Cementing Program:</u>

### A. Casing Program: All New

Hole Size	Casing Size	Wt./Ft.	Grade	Joint	Depth Set (MD)
20"	14" O.D.				40' (GL)
11"	8-5/8"	24#	J-55	ST&C	0 - 1,716' (KB) est.
7-7/8"	4-1/2"	11.6#	N-80	LT&C	0 - 5259' (KB)

The surface casing will have guide shoe, 1 joint, insert float collar. Centralize the shoe joint with bowspring centralizers in the middle and top of the joint and the next16 joints

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<u>Enduring Resources, LLC Southam Canyon 10-25-44-32 Page - 3 -</u> with bowspring centralizers on every other collar (8 centralizers total). Thread lock guide shoe.

Casing string(s) will be pressure tested to 0.22 psi/foot of casing string length or 1500 psi, whichever is greater (not to exceed 70% of the internal yield strength of the casing), after cementing and prior to drilling out from under the casing shoe.

#### B. Casing Design Parameters:

Depth (MD)	Casing	Collapse(psi)/SF	Burst (psi)/SF	Tension(mlbs)/SF
40' (GL)	14" OD		V	
1716' (KB)	8-5/8", 24#/ft, J55, STC	1370/1.52(a)	2950/3.28(b)	244/5,81(c)
5259"(KB)	4-1/2", 11.6#/ft, N-80, LTC	6350/2,32 (d)	7780/3.10 (e)	223/4.25(f)

- (a.) based on full evacuation of pipe with 8.6 ppg fluid on annulus
- (b.) based on 8.6 ppg gradient with no fluid on annulus
- (c.) based on casing string weight in 8.6 ppg mud
- (d.) based on full evacuation of pipe with 10.0 ppg fluid on annulus
- (e.) based on 9.2 ppg gradient, gas to surface, with no fluid on annulus, no gas gradient
- (f.) based on casing string weight in 9.2 ppg mud

#### PROPOSED CEMENTING PROGRAM

#### Surface Casing (if well will circulate)-Cemented to surface

CASING	SLURRY	FT. of FILL	CEMENT TYPE	sxs	EXCESS (%)	WEIGHT (ppg)	YIELD (ft <sup>3</sup> /sx)
8-5/8"	Lead	1216	Premium cement + 16% gel + 0.25 pps celloflake	110	25%	11.1	3.50
8-5/8"	Tail	500	Premium cement + 2% CaC <sub>2</sub> + 0.25 pps celloflake	138	25%	15.8	1.15

A cement top job is required if cement fallback is greater than 10' below ground level. Top job (weight 15.8 ppg, yield 1.15  $\rm ft^3/sx$ ) cement will be premium cement w/ 3% CaCl<sub>2</sub>.+0.25 pps celloflake. Volume as required

## Surface Casing (if well will not circulate) - Cemented to surface

CASING	SLURRY	FT. of FILL	CEMENT TYPE	sxs	EXCESS (%)	WEIGHT (ppg)	YIELD (ft³/sx)
8-5/8"	Lead	500	Premium cement + 2% CaCl <sub>2</sub> + 0.25 pps celloflake	138	25	15.8	1.15
8-5/8"	Top job	As req.	Premium cement + 3% CaCl <sub>2</sub> + 0.25 pps celloflake	As Req.		15.8	1.15

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#### Enduring Resources, LLC Southam Canyon 10-25-44-32

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#### Production Casing and Liner - Cemented TD to 300' above base of surface casing

CASING	SLURRY	FI.	CEMENT TYPE	SXS	EXCESS	WEIGHT	YIELD
		of FILL			(%)	(ppg)	(ft³/sx)
4-1/2"	Lead	214	Class "G" + 5% NaCl + 12% Gel + 0.25 pps celloflake + 0.2% antifoam + 0.25% fluid loss + 1% extender	21	25	11.0	3.3
4-1/2"	Tail	3629	50/50 POZ Class G + 2% gel +1% CaCl <sub>2</sub> + 0.2% dispersant + 0.2% fluid loss + 0.1% antifoam	662	25	14.3	1.56

Cement volumes for the 4-1/2" Production Casing will be calculated to provide a top of cement to 300' above base of surface casing. Cement volumes are approximate and were calculated under the assumption that a gauge hole will be achieved. Actual cement volumes may vary due to variations in the actual hole size and will be determined by running a caliper log on the drilled hole. Actual cement types may vary due to hole conditions and cement contractor used.

All waiting on cement (WOC) times will be adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

#### 5. <u>Drilling Fluids (mud) Program:</u>

Interval (MD)	Mud Weight	Fluid Loss	Viscosity	Mud Type
0' - 1716' (KB)		No cntri	·	Air/mist
1,716'-3000' (KB)	8.4-8.6	No cntrl	28-36	Water
3000'-5259 (KB)	8.8-9.8	8 - 10 mì	32-42	Water/Gel

Sufficient mud material(s) to maintain mud properties, control lost circulation and contain a blowout will be available at the well site during drilling operations.

#### 6. <u>Evaluation Program:</u>

Tests:

No tests are currently planned.

Coring:

No cores are currently planned.

Samples:

No sampling is currently planned.

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DIV. OF OIL, GAS & MINING

#### Enduring Resources, LLC Southam Canyon 10-25-44-32

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#### Logging

 Dual Induction – SFL /Gamma Ray/Caliper/SP/TDLT/CNL/ML TD to Base Surface Casing

Cement Bond Log / Gamma Ray:
 TD to Base of Surface Casing or Top of Cement if below Base of Surface Casing

<u>Stimulation</u>: A stimulation or frac treatment will be designed for completion of this well based on openhole log analysis. The drill site, as approved, will be sufficient size to accommodate all completion activities.

#### 7. Abnormal Conditions:

No abnormal temperatures or pressures are anticipated. No  $H_2S$  has been encountered or known to exist from previous wells drilled to similar depths in the general area.

Maximum anticipated bottom hole pressure equals approximately 2735 psi (calculated at 0.52psi/foot of hole) and maximum anticipated surface pressure equals approximately 1578 psi (anticipated bottom hole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot of hole).

#### 8. Anticipated Starting Dates:

Anticipated Commencement Date-

Within one year of APD issue.

Drilling Days-

Approximately 10 days

Completion Days

Approximately 10 days

• Anticipate location construction within 30 days of permit issue.

#### 9. <u>Variances:</u>

None anticipated

#### 10. <u>Other:</u>

A Cultural Resource Inventory and Paleontology reconnaissance shall be conducted for the well location, access route and pipeline. The reports shall be submitted to the Division of Oil, Gas and Mining and the School and Institutional Trust lands Administration upon their receipt.

Single Shot directional surveys will be dropped every 2000 feet to monitor hole angle.

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DIV. OF OIL, GAS & MINING

From:

Ed Bonner

To:

Mason, Diana

Date:

12/18/2006 1:42 PM

Subject:

Well Clearance

CC:

Davis, Jim; Garrison, LaVonne; Hill, Brad; Hunt, Gil

The following wells have been given cultural resource clearance by the Trust Lands Cultural Resources Group:

Dominion E&P, Inc

LCU 16-2H (API 43 047 38675)

**Enduring Resources, LLC** 

Southam Canyon 10-25-44-32 (API 43 047 38481)

Kerr McGee Oil & Gas Onshore LP

Bonanza 1023-2D-4 (API 43 047 38761)

Bonanza 1023-20-1 (API 43 047 38762)

State 1022-250 (API 43 047 38851)

If you have any questions regarding this matter please give me a call.



State of Utah

Department of Natural Resources

MICHAEL R. STYLER Executive Director

Division of Oil, Gas & Mining

JOHN R. BAZA Division Director JON M. HUNTSMAN, JR. Governor

> GARY R. HERBERT Lieutenant Governor

> > December 18, 2006

Enduring Resources, LLC 475 17th St., Ste. 1500 Denver, CO 80202

Re:

Southam Canyon 10-25-44-32 Well, 2123' FSL, 555' FEL, NE SE, Sec. 32, T. 10 South, R. 25 East, Bottom Location 659' FSL, 662' FEL, SE SE, Sec. 32, T. 10 South, R. 25 East, Uintah County, Utah

#### Gentlemen:

Pursuant to the provisions and requirements of Utah Code Ann.§ 40-6-1 et seq., Utah Administrative Code R649-3-1 et seq., and the attached Conditions of Approval, approval to drill the referenced well is granted.

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date. The API identification number assigned to this well is 43-047-38481.

Sincerely

Associate Director

pab Enclosures

cc:

Uintah County Assessor (via e-mail)

**SITLA** 

Operator:	·	Endurin				
Well Name & Numl	oer	Southar	Southam Canyon 10-25-44-32			
API Number:		43-047-	38481			
Lease:	····	065				
Location:	NE SE	Sec32_	T. 10 South	<b>R.</b> 25 East		
<b>Bottom Location:</b>	SE SE	<b>Sec.</b> 32	T. 10 South	R. 25 East		

#### **Conditions of Approval**

#### 1. General

Compliance with the requirements of Utah Admin. R. 649-1 *et seq.*, the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

#### 2. Notification Requirements

The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

- 24 hours prior to cementing or testing casing
- 24 hours prior to testing blowout prevention equipment
- 24 hours prior to spudding the well
- within 24 hours of any emergency changes made to the approved drilling program
- prior to commencing operations to plug and abandon the well

The following are Division of Oil, Gas and Mining contacts and their work telephone numbers (please leave a voice mail message if the person is not available to take the call):

- Dan Jarvis at (801) 538-5338
- Carol Daniels at (801) 538-5284 (spud)

#### 3. Reporting Requirements

All required reports, forms and submittals will be promptly filed with the Division, including but not limited to the Entity Action Form (Form 6), Report of Water Encountered During Drilling (Form 7), Weekly Progress Reports for drilling and completion operations, and Sundry Notices and Reports on Wells requesting approval of change of plans or other operational actions.

- 4. In accordance with Utah Admin. R.649-3-11, Directional Drilling, the operator shall submit a complete angular deviation and directional survey report to the Division within 30 days following completion of the well.
- 5. Compliance with the State of Utah Antiquities Act forbids disturbance of archeological, historical, or paleontological remains. Should archeological, historical or paleontological remains be encountered during your operations, you are required to immediately suspend all operations and immediately inform the Trust Lands Administration and the Division of State History of the discovery of such remains.
- 6. Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis. (Copy Attached)

Page 2 43-047-38481 December 18, 2006

- 7. This proposed well is located in an area for which drilling units (well spacing patterns) have not been established through an order of the Board of Oil, Gas and Mining (the "Board"). In order to avoid the possibility of waste or injury to correlative rights, the operator is requested, once the well has been drilled, completed, and has produced, to analyze geological and engineering data generated therefrom, as well as any similar data from surrounding areas if available. As soon as is practicable after completion of its analysis, and if the analysis suggests an area larger than the quarter-quarter section upon which the well is located is being drained, the operator is requested to seek an appropriate order from the Board establishing drilling and spacing units in conformance with such analysis by filing a Request for Agency Action with the Board.
- 8. Surface casing shall be cemented to the surface.
- 9. Operator shall comply with applicable recommendations resulting from Resource Development Coordinating Committee review. Statements attached.

#### STATE OF UTAH

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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DI	ML-47065					
Do not use this form for proposals to drill new w	IOTICES AND REPORT  wells, significantly deepen existing wells below compared to the significantly deepen existing wells below to the significant to DRILL s	urrent bottom-hole dept	th, reenter plugged wells, or to	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:  n/a  7. UNIT or CA AGREEMENT NAME:  n/a		
1. TYPE OF WELL OIL WELL	8. WELL NAME and NUMBER: Southam Canyon 10-25-44-32					
2. NAME OF OPERATOR: Enduring Resources, LLC 3. ADDRESS OF OPERATOR:			PHONE NUMBER:	9. API NUMBER: 4304738481 10. FIELD AND POOL, OR WILDCAT:		
475 17th Street, Suite 1500 CITY D  4. LOCATION OF WELL FOOTAGES AT SURFACE: 2123 FS  QTR/QTR, SECTION, TOWNSHIP, RANGE,	L - 555 FEL		(303) 350-5719	COUNTY: Uintah		
	, comment the rest at an annual state of business to			UTAH		
	PRIATE BOXES TO INDICA		OF NOTICE, REPO	RT, OR OTHER DATA		
TYPE OF SUBMISSION  NOTICE OF INTENT (Submit in Duplicate)  Approximate date work will start:	ACIDIZE  ALTER CASING  CASING REPAIR  CHANGE TO PREVIOUS PLANS	DEEPEN FRACTURE NEW CONS OPERATOR	TREAT	REPERFORATE CURRENT FORMATION  SIDETRACK TO REPAIR WELL  TEMPORARILY ABANDON  TUBING REPAIR		
SUBSEQUENT REPORT (Submit Original Form Only)  Date of work completion:	CHANGE TUBING CHANGE WELL NAME CHANGE WELL STATUS COMMINGLE PRODUCING FORMATIONS CONVERT WELL TYPE	RECLAMAT		VENT OR FLARE     WATER DISPOSAL     WATER SHUT-OFF     OTHER: Request for APD     Extension		
	007	ension to the e	expiration date of this	es, etc. s Application for Permit to Drill		
Utah Division of Oil, Gas and Mining  Date: (2-16-97-						
	Ву:	BI	All I	COPY SENT TO OPERATOR Date: 12-18-2007 Initials: 25		
NAME (PLEASE PRINT) Alvin R. (AI) SIGNATURE	Arlian	TITI	12/14/2007	ılatory Specialist		
				- 12 <sup>0</sup> FA		

(This space for State use only)

DEC 17 2007
DIV. OF OIL, GAS & MANING



#### Application for Permit to Drill Request for Permit Extension Validation

Validation
(this form should accompany the Sundry Notice requesting permit extension)

API: 4304738481  Well Name: Southam Canyon 10-25-44-32  Location: 2123' FSL - 555' FEL, NESE, Sec 32, T10S-R25E  Company Permit Issued to: Enduring Resources, LLC  Date Original Permit Issued: 12/18/2006					
The undersigned as owner with legal rights to drill on the property as permitted above, hereby verifies that the information as submitted in the previously approved application to drill, remains valid and does not require revision.					
Following is a checklist of some items related to the application, which should be verified.					
If located on private land, has the ownership changed, if so, has the surface agreement been updated? Yes □ No □					
Have any wells been drilled in the vicinity of the proposed well which would affect the spacing or siting requirements for this location? Yes□ No ☑					
Has there been any unit or other agreements put in place that could affect the permitting or operation of this proposed well? Yes□No☑					
Have there been any changes to the access route including ownership, or right-of-way, which could affect the proposed location? Yes ☐ No ☑					
Has the approved source of water for drilling changed? Yes□No☑					
Have there been any physical changes to the surface location or access route which will require a change in plans from what was discussed at the onsite evaluation? Yes □ No ☑					
Is bonding still in place, which covers this proposed well? Yes ☑No□					
12/14/2007					
Signature Date					
Title: Landman - Regulatory Specialist					
Representing: Enduring Resources, LLC					

DIV. OF OIL, GAS & MINING

STATE OF UTAH

	DIVISION OF OIL, GAS AND		FIDENTIAL	5. LEASE DESIGNATION ML-47065	AND SERIAL NUMBER:
SUNDR	Y NOTICES AND REPOR	TS ON WE	LI <del>ULIVIIAL</del> LS	6. IF INDIAN, ALLOTTEE	OR TRIBE NAME:
Do not use this form for proposals to drill	new wells, significantly deepen existing wells below	current bottom-hole de	oth, reenter plugged wells, or to	7. UNIT or CA AGREEME n/a	:NT NAME:
1 TYPE OF WELL	laterals. Use APPLICATION FOR PERMIT TO DR		als.	8. WELL NAME and NUM	BER:
OIL WELL	GAS WELL 🗹 OTHER	K		Southam Cany	on 10-25-44-32
2. NAME OF OPERATOR: Enduring Resources, LLC	2			9. API NUMBER: 4304738481	
3. ADDRESS OF OPERATOR:			PHONE NUMBER:	10. FIELD AND POOL, O	R WILDCAT:
475 17th Street, Suite 1500 Cm	Denver STATE CO	ZIP 80202	(303) 350-5114	Undesignated	
FOOTAGES AT SURFACE: 2123'	FSL - 555' FEL			соимту: Uintah	
50 to 20 000 cm of the control of th	* 094 15 W 20 10 10 10 10 10 10 10 10 10 10 10 10 10			liin ritan mahkitti	rali kanggira ku a ni manarri salahan
QTR/QTR, SECTION, TOWNSHIP, RAI	NGE, MERIDIAN: NESE 32 10S	25E S		STATE:	TAH
11. CHECK APP	ROPRIATE BOXES TO INDIC	ATF NATURE	OF NOTICE REPO	ORT. OR OTHER I	DATA
TYPE OF SUBMISSION	TOTAL TE BOXES TO INDIO		YPE OF ACTION		
	ACIDIZE	DEEPEN		REPERFORATE	CURRENT FORMATION
NOTICE OF INTENT (Submit in Duplicate)	ALTER CASING	FRACTUR	ETREAT	SIDETRACK TO	REPAIR WELL
Approximate date work will start:	CASING REPAIR	NEW CON	STRUCTION	TEMPORARILY A	ABANDON
	CHANGE TO PREVIOUS PLANS	OPERATO	R CHANGE	TUBING REPAIR	
	CHANGE TUBING	PLUG AND	ABANDON	VENT OR FLARE	<b>:</b>
SUBSEQUENT REPORT (Submit Original Form Only)	CHANGE WELL NAME	PLUG BAC	K .	WATER DISPOS	AL .
Date of work completion:	CHANGE WELL STATUS	PRODUCT	ION (START/RESUME)	WATER SHUT-C	
Date of Work Competition	COMMINGLE PRODUCING FORMATION	NS RECLAMA	TION OF WELL SITE		uest for APD
	CONVERT WELL TYPE	RECOMPL	ETE - DIFFERENT FORMATION		nsion
12. DESCRIBE PROPOSED OR C	OMPLETED OPERATIONS. Clearly show a	all pertinent details in	cluding dates, depths, volun	nes, etc.	
Enduring Resources,	LLC respectfully request an ex	tension to the	expiration date of thi	is Application for P	ermit to Drill
FROM: 12/18	8/2008	pproved by	the		
TO: 12/1	8/2009	Itah Divisio	n ot		
•	Oil	, Gas and M	Mining		
	Date:	12-22-	7100		
	By:	Model			
			71		
NAME (PLEASE PRINT) Alvin R. (A	Al) Arlian	TIT	Landman - Regu	ulatory Specialist	
NAME (FLENSE PRINT)			:	<del> </del>	
SIGNATURE	MIZ-	DA	12/8/2008		
(This space for State use only)				RFCI	EIVED
COPY SE	ENT TO OPERATOR				
Date: 12	2.30.2008			DEC 1	8 2003
-u.u. 11	<u> </u>				

(See Instructions on Reverse Side)

(5/2000)

Initials:\_

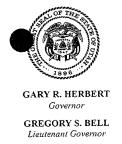


# Application for Permit to Drill Request for Permit Extension Validation

Validation
(this form should accompany the Sundry Notice requesting permit extension)

Location: 2123' Company Permit Is	38481  nam Canyon 10-25-44-32  FSL - 555' FEL, NESE, Sec 32, T10S-R25  ssued to: Enduring Resources, LLC  nit Issued: 12/18/2006	SE .
above, hereby verific	owner with legal rights to drill on t es that the information as submitte n to drill, remains valid and does n	ed in the previously
Following is a check verified.	klist of some items related to the ar	oplication, which should be
If located on private agreement been upo	land, has the ownership changed, dated? Yes⊡No⊡	if so, has the surface
•	n drilled in the vicinity of the propos requirements for this location? Ye	
	unit or other agreements put in pla ion of this proposed well? Yes□ N	
	y changes to the access route incl affect the proposed location? Yes	<del>-</del>
Has the approved so	ource of water for drilling changed	? Yes□ No☑
	y physical changes to the surface l change in plans from what was dis lo☑	
Is bonding still in pla	ace, which covers this proposed we	ell? Yes⊠No⊟
Signature	nett	12/8/2008 Date
Title: Administrative A	Assistant	
Representing: Endu	uring Resources, LLC	RECEIVE

RECEIVED DEC 18<sub>2008</sub>



## State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

January 7, 2010

Al Arlian Enduring Resources, LLC 475 17<sup>TH</sup> Street Ste 1500 Denver, CO 80202

Re: <u>APD Rescinded – Southam Cyn 10-25-44-32, Sec. 32 T.10S, R. 25E</u>

Uintah County, Utah API No. 43-047-38481

Dear Mr. Arlian:

The Application for Permit to Drill (APD) for the subject well was approved by the Division of Oil, Gas and Mining (Division) on December 18, 2006. On December 18, 2007 and December 22, 2008 the Division granted a one-year APD extension. No drilling activity at this location has been reported to the division. Therefore, approval to drill the well is hereby rescinded, effective January 7, 2010.

If any previously unreported operations have been performed on this well location, it is imperative that you notify the Division immediately.

Sincerely,

Diana Mason

**Environmental Scientist** 

cc: Well File

SITLA, Ed Bonner

